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Excavations at Shongweni South Cave: the oldest evidence to date for cultigens in southern Africa

by

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SYNOPSIS

This paper describes the excavation in 1971 of a large cave overlooking the steeply incised River Mlazi at Shongweni Waterworks, some 25 km upstream from where it debouches into the coastal plain near the head of Natal Bay. Two main periods of occupation were identified, a later period discontinuously from the thirteenth century A.D. to the end of the third millennium B.C., and an earlier much more discontinuous period from near 10000 to about 21000 B.C. The upper occupation was marked by floors of dung and leaves and by small hearths separated by lenses of dust and rock-spalls; in the lower large beds of ash interfingered with pink sterile dust.

The dryness of the cave had ensured the good preservation in the upper occupation of vegetable material, wood, plants, leaves and artefacts such as twine, but not of animal-remains except bone. There was evidence as far back as 2000 B.C. for pottery and for apparently cultivated plants (two cereals, *Pennisetum* and *Eleusine*; and two cucurbits, bottle-gourd and melon); sorghum was found, but probably of a date when it could have been introduced by Bantu-speakers. There was a wide variety of wild vegetable foods. The range of exploitation was large, as there were several marine shells, and some of the legumes may have grown only near the coast; workable stone also was fetched from far. The stone-work is poor; some tools and weapons were made of bone and of hard wood. There were beads made from shells of freshwater-bivalves.

The lower occupation yielded a much less complete picture. During the hiatus rain may sometimes have wetted the cave-floor, so it is doubtful if vegetable-remains, apart from a few seeds, survive from this period. The stone industry is even poorer than in the upper occupation. There are a great many chips of bone, of which a few may have been shaped as tools.

This is the first detailed excavation of a cave in the lower valleys of Natal, and will furnish a basis for comparison with the life and techniques of (?) Bushmen in the coastal areas of the Cape and in the high interior.

INTRODUCTION

Like all Natal rivers, R. Mlazi (Umlaas) incises a deep valley into a peneplain from a nickpoint near Hammarsdale, about 40 km from the mouth as the crow flies (considerably more if one reckons all the meanders). Before recent engineering works, it flowed into the sea at Isipingo through a series of beach-terraces (Davies 1970) capped by Berea red sands (dune-sands mostly dating from the early part of the Last Glaciation). The dissected peneplain drops from about 700 m S.L. near the highest nickpoint to about 410 m near Nwabi Mountain and the settling-tanks 16 km from the mouth, and is about 550 m at Shongweni Reservoir; the Mlazi valley is incised into it to approximately 525 m near the nickpoint and 128 m S.L. at the settling-tanks. The width and steepness of the valley depend on the rocks through which it is cut. Near Shongweni the river incises quartzites (Natal Table Mountain Sandstones) which rise in nearly vertical cliffs and dip gently southwards.

The incision has been caused by fairly rapid uplift. The uppermost levels of the valley are wide and open, and are probably of considerable antiquity. The incision of the lower levels seems to have begun near the end of the Tertiary and has continued through the Quaternary (cp. King 1972*a*). Uplift and incision have not been continuous, owing largely to glacio-eustatic fluctuations of the ocean. A series of shorelines (Davies 1970) seems to mark eustatic peaks, interspersed by drops of over 100 m during glacial periods, causing rapid incision close to river-mouths and accumulation of unconsolidated sediments during eustatic transgressions (Maud 1968: 183–186). The steep gorges near the coast make it impossible to trace the river-terraces associated with each shoreline. It seems likely that several of the terraces coalesced not far from the mouths. Nevertheless, there are traces of three terraces up the lower Mlazi, and below bars of hard rock the picture is complicated by several stages of incision. These terraces can to some extent be dated by Acheulian artefacts included in the gravels. The breaking of the bar at Shongweni has left traces of several terrace-gravels from which rolled picks and hand-axes were collected 25 years ago (Davies 1952).

Shongweni Reservoir (on present Trigonometrical Survey map 2930 DC Hammarsdale, Ntshongweni) is ringed by abrupt slopes, and on the right bank just below the dam there is a precipice with about 25 m of steep rocky talus at the base. In this precipice are several caves, incised into less-resistant beds of quartzite by loops of the river as it cut downwards through the rock-bar towards the present valley-floor. The south cave, which we excavated, is at 29°51'46"S, 30°43'15"E. The floor of the cave before excavation was about three metres below the spillway and very little below a step on the dam-wall, i.e. at 298 m S.L. and about 27 m above the river. Incised into the same bed some ten metres to the north is a second cave. A small pit had been dug in it by some person unknown, and on the floor at the back were found several sherds (fig. 1.2–3). About half a kilometre downstream on the right bank are several shallow caves at a higher level on a steep but not precipitous slope; on the roof of one is a painting (S.A.A.B. 1969). There are other signs of prehistoric occupation in the area. Stone-age material has been found in a donga on the slope (Faure-

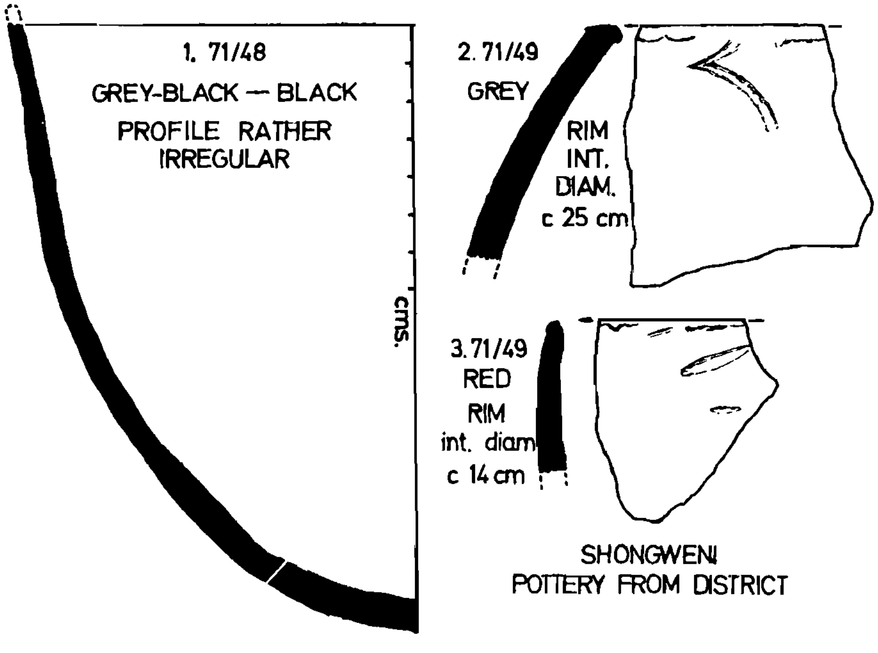
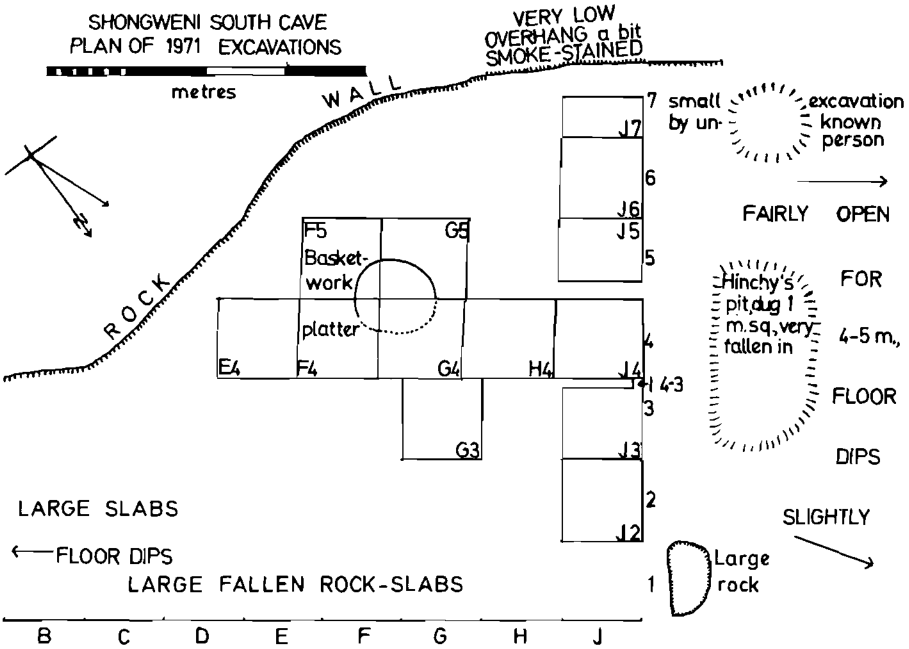


Fig. 1


SHONGWENI SOUTH CAVE
PLAN OF 1971 EXCAVATIONS
metres
VERY LOW OVERHANG a bit SMOKE-STAINED
WALL
ROCK
F5
G5
Basket-work
platter
E4
F4
G4
H4
J4
G3
J7
J6
J5
J3
J2
7
6
5
4
4·3
3
2
1
small excavation by un-known person
FAIRLY OPEN FOR 4-5 m., FLOOR DIPS SLIGHTLY
Hinchy's pit,dug 1 m.sq.,very fallen in
LARGE SLABS
FLOOR DIPS
LARGE FALLEN ROCK-SLABS
Large rock
B
C
D
E
F
G
H
J

Platform extends 1 m. outside base-line with many fallen slabs; then drops steeply. Drip-line, marked by bushes, is 4-5 m out.

Fig. 2

smith or very late Acheulian). In a rock-crevice on the road to the dam, not far from Delville Wood Store, a round-based pot was found by one of the waterworks officials and presented to the Natal Museum (fig. 1.1).

It is rumoured that at some time before 1950 someone removed human bones from the south cave to the Durban Museum; but they have not been identified there. The cave was first examined in 1952 by Dr V. Hinchy, who was chemist to the Durban Waterworks. Along with Mr R. C. Walsh, to whom I owed this information, he dug a pit one metre square. He found about six beads of shell, quartz chips, sherds, and much vegetable material, grass-rope and pointed sticks. Below about 23 cm of very soft grey ashy earth he came to more consolidated material, and at a depth of about one metre he reached nearly sterile pink sand among large slabs which hindered further excavation. He clearly did not strike the great ash-deposits which we reached in rows H and I. The remains of his pit, much fallen in, are visible north of our section-line on the north side of J (see fig. 2). His finds have disappeared since his death. Apparently a small pit was subsequently dug near the back of the cave by someone unknown.

In view of the interest of Dr Hinchy's finds, it was decided to carry out excavations at the south cave on behalf of the Natal Branch of the South African Archaeological Society. Permission was kindly granted by Mr C. G. Hands, Durban City Engineer, and valuable assistance was given by the waterworks superintendent, Mr R. Tumner, especially in throwing a light bridge across the river, which had become unfordable since a flood in the previous year, and in having bush cleared on the talus. A permit was granted by the National Monuments Council. A grant of £100 was made by the Boise Fund of the University of Oxford. The excavation lasted from 9 June to 11 July 1971. I had to be there for seven days a week, because at week-ends many visitors come to the park and might have done damage. One labourer was employed, and several members of the Society came to help. Finds and full documentation have been placed in the Natal Museum, except for samples of plants which have been handed to the Botanical Research Institute, Pretoria.

The floor of the southern part of the cave was nearly level, dipping very slightly from row 2 inwards. Row 1 was mostly large slabs, among which digging would have been impossible without heavy machinery which we had not the means to haul to the cave. We worked to the south of Dr Hinchy's pit, because to the north the floor had suffered erosion. Owing to the wide overhang the cave is extremely dry. It faces away from normal rainy winds, and though mist sometimes penetrates up the valley, the floor may in recent times never have been wetted by rain.

It was planned to lay out a grid of one-metre squares on a base-line near the cave-mouth, whence offsets were taken by a right-angle finder; depths were to be measured from marked points on the roof. Owing to the number of rock-spalls it was impossible to demarcate the squares by metal-pegs, and it was found that there were inaccuracies in the grid, which appear on the plan (fig. 2). Nor was measurement of depth from the roof satisfactory, and it was necessary to measure from the lips of pits though the surface became a bit churned up. It may, however, be taken that inaccuracies of depth did not exceed 2 cm. Pits were dug in 10 cm spits, save where a sharp change in stratification, e.g. the interface of the big hearths with the upper occupation, made it necessary to divide a level. The low roof near the back of the cave made excavation impossible; and the absence of true occupation-earth in J7 indicated that it would not be profitable. The pits were refilled mostly with large stones, which will be distinctive if ever it is desired to re-excavate.

THE STRATIFICATION

The natural cave-earth is fine pinkish sand with many rock-spalls. At the back[1] of the cave in J7 this occurred to the surface, at the back of J6 from about 6 cm deep. It contained a few pieces of wood and charcoal, and one or two stone artefacts and cut bones; these must have been spread from the occupation farther east, and are regarded as roughly contemporary with corresponding occupation-levels, though it is likely that cave-earth banked a little against the back wall. Numerous bone-fragments, mostly of small animals but including baboon and mountain reedbuck, do not look like kitchen-refuse, though Mr Carter observed no difference from the collections in the main habitation-area. They may have been introduced by carnivores, or be from animals which died naturally in the cave. Conglomerated sand-ovoids below 40 cm may be internal casts of cocoons. The pinkish sand extended in the south part of J7 to a large slab at 28 cm, on the north to a slab at 75 cm, which went into the back of J6, behind another very large slab at 45 cm.

Similar pinkish sand, practically sterile, occurred between the great ash-layers in the forward part of Trench J (see fig. 3), particularly below the hearth of Level III,

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[1] In this report 'back' and 'front' of the cave are in relation to its mouth. The cave is regarded as opening to the east, so the section-line J2–7 is described as east-west, and E–J as south-north.

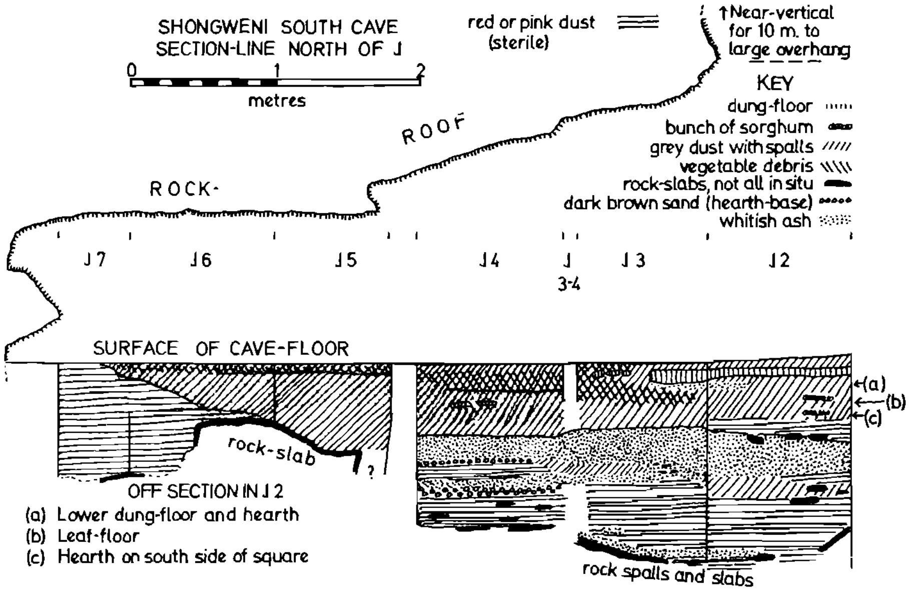
SHONGWENI SOUTH CAVE
SECTION-LINE NORTH OF J
0
1
2
metres
red or pink dust (sterile)
↑Near-vertical for 10 m. to large overhang
KEY
dung-floor
bunch of sorghum
grey dust with spalls
vegetable debris
rock-slabs, not all in situ
dark brown sand (hearth-base)
whitish ash
ROOF
ROCK-
J7
J6
J5
J4
J 3-4
J3
J2
SURFACE OF CAVE-FLOOR
rock-slab
?
OFF SECTION IN J 2
(a) Lower dung-floor and hearth
(b) Leaf-floor
(c) Hearth on south side of square
(a)
(b)
(c)
rock spalls and slabs

Fig. 3. Section along row J7–2.

where up to 45 cm of it had accumulated over a period of roughly 8 000 years abandonment. All along Trench J our excavation was halted by large tumbled slabs, between which in crannies was pinkish sand. The section suggests that there had been two periods of rock-fall, one in the back of the cave before the Upper Occupation (i.e. between 4000 and 11800 B.P.), the other before the lowest hearth of Level VII (i.e. before 23000 B.P.). Cooke (1973) lists several instances of rock-fall in caves in Rhodesia and the Cape around 25000 B.P. Perhaps during the Last Glaciation incursions of Antarctic air penetrated as far north as Durban and caused repeated freezing.

It was not possible to dig the whole of J5, to examine if the ash-layers continued beneath the slab of the later fall (see fig. 3). Nor could we have moved any of the lower slabs without opening up much more than we intended and using heavy machinery. Thus I have no idea if there had been an older occupation; we nowhere reached rock-floor.

THE UPPER OCCUPATION

The Upper Occupation layer consisted of grey dusty earth with many rock-spalls and much vegetable-debris, twigs, leaves and reeds. Its thickness was 40 cm, in some squares a little more. Its base was nearly horizontal. In some squares it rested on the white ash of the Lower Occupation, in J2 on a slightly irregular surface of nearly sterile pinkish sand, which interfingered between the grey earth and the ash and contained grey pockets with much charcoal; it had been disturbed by trampling and perhaps by shallow pitting. In J3 and J4 the boundary between grey dust and white ash was sharp.

Though the grey dust seemed homogeneous, the radiocarbon-dates indicate that it had accumulated over a long period of probably discontinuous occupation. There

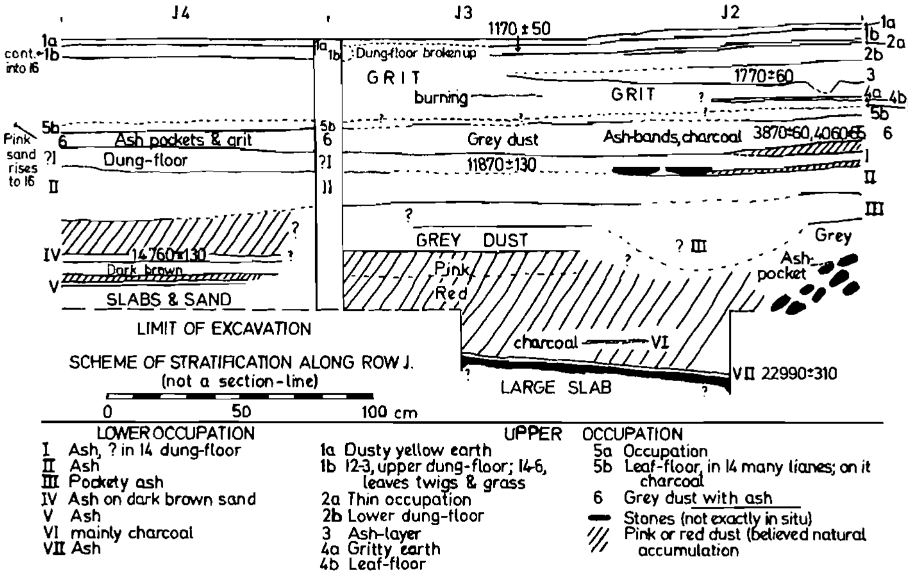
J4
J3
J2
1a
cont. 1b into I6
1a
1b
Dung-floor broken up
1170 ± 50
1a
1b
2a
2b
GRIT
burning
GRIT
1770±60
3
4a
4b
5a
5b
Pink sand rises to I6
5b
6
Ash pockets & grit
?I
Dung-floor
II
5b
6
?I
II
Grey dust
Ash-bands, charcoal
3870±60, 4060±65
6
11870±130
I
II
III
?
GREY DUST
? III
Grey
Ash-pocket
IV
14760±130
Dark brown
V
SLABS & SAND
Pink
Red
LIMIT OF EXCAVATION
charcoal
VI
SCHEME OF STRATIFICATION ALONG ROW J.
(not a section-line)
VII 22990±310
LARGE SLAB
0
50
100 cm
LOWER OCCUPATION
I Ash, ? in I4 dung-floor
II Ash
III Pockety ash
IV Ash on dark brown sand
V Ash
VI mainly charcoal
VII Ash
UPPER OCCUPATION
1a Dusty yellow earth
1b I2-3, upper dung-floor; I4-6, leaves twigs & grass
2a Thin occupation
2b Lower dung-floor
3 Ash-layer
4a Gritty earth
4b Leaf-floor
5a Occupation
5b Leaf-floor, in I4 many lianes; on it charcoal
6 Grey dust with ash
Stones (not exactly in situ)
Pink or red dust (believed natural accumulation

Fig. 4. Schematic section of occupations in J4–2 with dates.

had in places been disturbance within it, carrying small objects downwards, most notably a pit in H4 which had been dug after the highest surviving level in J. The most reliable stratigraphic markers were floors of dung or leaves; but these had in places been broken up.

In J2–A and part of J3–A, above a hard dung-surface, were 2–3 cm of dusty yellow earth, much disturbed. It contained coarse sand and a few stones and rock-spalls, scattered charcoal, patches of rotted vegetation, seeds, fruits and thorns, also bones, shell, sherds and lydianite flakes.[2] In the middle of J3 on the surface of the dung-floor there were signs of burning. This material seems to be the remains of a largely eroded occupation (Level 1).[3] Towards the back of J3 and in H4 the dung-floor had been broken up, in J3 perhaps by rock-fall, in H4 by a deep pit containing scraps of dung. In J4–A and the back of J3–A, beneath dusty yellow earth with only two stone flakes, were traces at 2 cm depth of a floor of matted grass and leaves, with few reeds and twigs. This leaf-floor was about 8 cm thick, thinning to 5 cm into J5–A and J6, where it was formed mainly of reeds cut square, in places laid criss-cross but not tied as a mat; indeed a piece of rope at 4 cm lay loose and must have been thrown in with the reeds. Probably leaves and grass had been placed upon them. Above them in these squares was up to 2 cm of dusty earth, sterile and containing many rock-spalls. Though the floor had been laid to the back of J6, there was no burning in the back of the cave.

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[2] Recorded contents of the upper dung-floor and the overlying earth: *Pennisetum americanum*; sorghum; pieces of *Lagenaria siceraria*; thorns, probably collected; stick with twine tied to the end; twig of *Fagara davyi* (Verdoorn); wild seeds and probably seed of *Citrullus lanatus*; one sherd; a few bone-splinters; fragments of shell of *Achatina* and probably *Perna*; flakes of lydianite and quartz.

[3] One or more subsequent occupations had completely disappeared and are attested only by the surface-pottery (fig. 6.1–3, below p. 642) and by the pit in H4 with radiocarbon-date (below p. 649).

In J2 there were two layers of caked dung (fig. 4). The upper (Level 1) was rather fibrous and contained wood-splinters, leaves and grass. It was at 2–6 cm depth all over J2 and half-way across J3, and ended in a nearly straight line. There was no sign of a structure bounding it; probably it had been broken up by a rock-fall, and fragments were found in the back of J3. It had been laid damp on grit which had adhered to it. It had apparently extended southward from row J but was fragmentary; lumps of dung were found in H4–A, G4–A, G3–A and E4–A.

Farther back, in G4–A, G5–A, F5–A and on the outer edge of F6–A and E4–A, as in J5, instead of dung there were reeds and twigs laid horizontally. In F4–A was a small patch of trodden mud. Owing to the fragmentary condition of the floor in this area and its not covering more than half the A spit, it is impossible to distinguish finds from in and above it (Level 1) from those probably associated with a lower floor (? Level 2) at about 10 cm.

The lower dung-floor in J2 (Level 2) was at 6–13 cm depth. It had been laid on stone slabs, some reddened below, probably from weathering and not from burning. It was hard and massive; it contained twigs and fibre, a little grass including a tied bundle, a long piece of rope and a piece of twine. It occurred only in the south-west half of the square, and ended diagonally across it.

Between the two dung-floors was a thin occupation-layer with traces of burning, wild seeds, *Eleusine coracana*, and scraps of bone and shell. In the lower dung-floor was *Pennisetum*, thorns, wild seeds, a few sherds, a few stone artefacts, a little shell and bone-fragments including fish-vertebrae.

With this lower dung-floor may be associated a lower twig-floor in G5–A and F5–A. This did not extend right to the back of G5, and there was no sign of it in E4; in H4 it could not be identified owing to disturbance. In G3–B it was probably represented by fragments of matted leaves mixed with some dung. In G5 there were traces of burning on it.

I am uncertain if a basket-like structure in F–G 4–5 belonged to the lower twig-floor or below it. This structure is marked on the plan (fig. 2). It first appeared at about 13 cm depth, and was best preserved towards south and west. It formed a shallow basin with base at 20 cm; its walls were probably higher and have rotted above 13 cm, so it could have been sunk into a floor at 10 cm. It was formed of radiating, laid grass-stalks and reeds, covered by medium-sized stones and hard earth, fairly compact and containing only scraps of charcoal. There was no sign that the stalks had been plaited; a bent stick round part of the rim suggested a hoop, but there was no sign of tying. On the hard earth were a very few twigs, seeds and bones, and two small sherds. So the structure was not movable, nor can it have been a food-store; it might have been a cradle.

In J2 the lower dung-floor rested at 10–13 cm on ash and charcoal, the remains of a hearth which had been partly spread (Level 3). The dung-floor was laid an appreciable time after the hearth, as one leaf was found between ash and dung and several at the base of the dung.

The hearth centred on a pit in the north-west part of J2 (not reaching the section-line), 20 cm across, associated with a surface at 14–16 cm. It was full of charcoal; a sample was dated 1770 ± 60 (Pta–821). In the ash were a few bone-splinters, charred nuts and twigs.

The base of the charcoal was at about 20 cm. A pocket of leaves and twigs on the western edge of J2 at the top of spit C probably marked another pit. There may have been a third on the western edge of the square, extending into J2–C below 20 cm. It was marked by a pocket of dark earth and traces of ash; at the base were very loose rock-spalls. In it were 29 sprays of *Eleusine*, 7 heads of *Pennisetum*, a piece of knotted grass, 2 reeds perhaps cut, and a sharp bone point; there was no indication that this collection had been tied into a bundle.

A thin line of ash extended Level 3 into J3. Elsewhere at the base of the lower dung-floor of Level 2 were a few leaves; but in general the dung rested on coarse grit, on which it had been laid damp, as grains had adhered to its base. In other squares the rather ephemeral Level 3 was not distinguishable.

Below Level 3 and in places where it was not identifiable in Trench J there was fairly compact grey dusty earth with small rock-spalls. In it were twigs, seeds, charcoal, stone and bone artefacts and other occupation-debris. It extended to the base of of the Upper Occupation at 40 cm or a little more. It must have accumulated over a long period; I have distinguished in it three levels (4–6). Scattered twigs and reeds suggested floors trampled and broken. The dates from J2–D (Level 6) of 3870 ± 60 (Pta–823) and 4060 ± 55 (Pta–1061), 2 000 years older than the ash of Level 3, indicate long and probably intermittent occupation. In J3–B were found several pieces of faeces which Dr Alan Hughes has examined. He reports that they are typical of small hyaena; the presence of this animal in the cave indicates at least occasional abandonment.[4]

The lower levels of the Upper Occupation petered out towards the back of the cave. In J5 vegetable-debris became very scarce below 25 cm, though there were still small objects, charcoal, seeds, bones and stone-fragments which could have made their way down or been thrown backwards from the centre of activity. Leaves could have blown in. Just below 40 cm the dust turned pink, and much of the square was blocked by a large fallen slab.

In the south-east part of J2 from 24 to 32 cm there was brown earth full of very rotten leaves which probably represented two if not three floors. Traces of burning at 21 cm in J3 may indicate an intermediate floor, which I have not counted. I have taken the material from the base of Level 3 to 25 cm as Level 4. The upper part of this was grey dusty earth which may mark a hiatus. In J4 there was apparently a leaf-floor at 25 cm, separated by charcoal from a lower leaf-floor at 32 cm. So the thick deposit in J2 (24–32 cm) probably spans two floors. In J3 and probably J4 the 25 cm level could not be distinguished, as the leaves had disintegrated to fibre.

From 25 to 32 cm I have designated Level 5. In the south-west part of J2 the leafy earth occurred only between 28 and 30 cm. The floor of Level 5 was at 32–35 cm. In it in J4 were long strands of liane, without any evidence that they had been used for tying; and bunches of coarse grass torn up by the roots, wedged nearly vertically with stone chips. In J3 it was not possible to trace the floor of Level 5; but above 33 cm seeds and pods were abundant in compacted grit, and below this level they became rare, and there appeared pockets of dark sand with disseminated charcoal and bones of small animals, suggestive of abandonment and the presence of wild carnivores.

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[4] Dr Hughes' letter is as follows: 'The droppings appear to contain bone, hair and some vegetable matter, probably grass. In form they are all typical of small hyaena faeces that have dried to a white colour on account of carnivorous diet containing a high proportion of bone. The one small piece of a darker brownish dropping is not typical; in the absence of more material identification is difficult. All the material appears to be of recent origin. It does not appear to have been mineralized in any way. The faeces are therefore not coprolites.' I would add that the lack of mineralization may be due to the extreme dryness of the cave-earth.

It was very difficult to distinguish finds from Levels 4 and 5. In the grey dust throughout this section there were sherds, bone, shell, stone artefacts, seeds and twigs; also, twine and three wooden splinters which had probably been needles. A piece of wasp's nest had probably fallen from the roof; a moth-pupa in J4–D is unlikely at this depth to be modern; see below p. 657.

Level 6 could be identified with assurance between the leaf-floor of Level 5 at 30–35 cm and the surface of the Lower Occupation. The unconformity was well marked, and represented a hiatus of several thousand years with probably much wind-erosion. The depth of the unconformity varied, so at the time of reoccupation the cave-floor was not quite level:

H4 northern part,	about 49 cm (perhaps disturbed from above)
H4 southern part,	about 44 cm
J2	about 42 cm
J3	about 44 cm
J4	about 40 cm
J5 front,	about 40 cm, rising backwards.

In J2, Level 6 consisted of several bands of white ash and much charcoal. Samples gave dates of 3870 ± 60 (Pta–823) and 4060 ± 55 (Pta–1061). Finds were in general scarce, and there were few vegetable-remains except seeds, including some cereal. In J3 and J4, instead of bands of ash, there was compacted grey dust with bone-chips.

Because the ash-deposits were almost entirely in the centre of the cave, where was presumably the focus of occupation, it was not easy to correlate the stratification of row J with the squares to the south in rows G, F and E. Row G was not dug below 20 cm, in order to preserve, beneath our refill, the basket-like structure in F–G 4–5.

Below Level 2 there was in G3–B soft dusty earth with a few twigs and reeds, very few leaves, some bone-splinters and other occupation-remains. In G4, F4 and F5 there appeared to be disturbance, with scraps of ash and dung; this may have been caused in making the basket-like structure from the floor of Level 2 at about 10 cm. In G5 and F5 pinkish sand, resting on rock, was appearing near 20 cm, natural accumulation being banked against the back of the cave.

In F4 and F5 there may have been a floor at about 20 cm, marked by disturbed reeds and twigs mixed with some clay and resting nearly vertically. This floor could be traced into E4, where charcoal and other debris were abundant between 15 and 20 cm, beneath almost sterile grey dust between 10 and 15 cm.

In E4 and F4 we were able to dig to 87 cm. Between 20 and 40 cm there was soft grey dust with fair-sized rock-spalls, hardly any charcoal, little vegetable-material, scraps of bone and stone. It appeared that at this level there had been no regular occupation of this end of the cave; sporadic seeds and dung-scraps had probably been trampled into the dust.

Near 40 cm large slabs were embedded at high angles into the south part of E4, so we could dig deeper only over about one metre square across E4 and E5. Below these slabs the dust remained grey, but there was no vegetable-material apart from occasional grass-stalks. So at about 40 cm we had probably reached the Lower Occupation;

the rock-fall had occurred during the long hiatus. Between 40 and 56 cm finds were scarce, only bone-splinters and chips of quartz and lydianite which match the finds in the Lower Occupation near the centre of the cave; but the absence of ash-layers made detailed correlation impossible. Finds were so poor that they would add nothing to the better stratified information from rows H and J; so it was not worth while obtaining an additional radiocarbon-date.

At 56 cm the dust turned to pink, and there were many large slabs dipping outwards. In the pink dust there was no more than a few scraps of bone.

THE LOWER OCCUPATION

The Lower Occupation was identified and examined only in rows H and J; we may have reached it in E4 and F4 at about 40 cm. In H and J I have identified seven layers of white ash, separated by interfingering pink dust which had accumulated during periods of abandonment (fig. 4). Where two ash-layers did not coalesce, they were easily distinguishable. But though there was little evidence for objects filtering down from above, the inventory from the ash-layers is so poor and culturally atypical that it is difficult to trace any development. Finds are almost entirely chips of bone and stone, with occasional terrestrial and perhaps freshwater molluscs. There was no pottery. Vegetable-remains were scarce, and may mostly have been displaced from above in animal-burrows or by other means. Seeds, being hard and resistant, are the most likely to have survived *in situ.*

In J2, J3 and J5 there was a little pink or orange sand between the Upper and Lower Occupations. In view of the long hiatus attested by the radiocarbon-dates, considerable sterile accumulation would have been expected; perhaps most of it was removed by erosion or mixed by trampling at the start of the Upper Occupation. A sifted sample from J3–F yielded a few root-fibres. These may indicate that during the hiatus a few plants grew in the cave, under perhaps a different climatic regime with stronger east winds. The formation of calcrete on bones also may indicate limited moisture.

The ash-layers probably accumulated over a long period with intervals of abandonment; but they could be separated only where there was interfingering sterile or nearly sterile pinkish dust. In some places the sterile layers may have been disturbed or contaminated by the new occupants.

In J2–E a distinct but thin ash-layer (Level I), slightly disturbed on surface, was overlain by pink sand beneath a hearth in J2–D which belonged to Level 6. This ash rested on another pinkish layer at 49–51 cm, and on large reddened blocks in the middle of the square, which were loose and easily removable. These blocks rested on a second ash-layer (Level II) but were not burnt underneath.

Ash-layer I almost certainly continued into J3–E lower. There was a concentration of bone-splinters at 45 cm in J2 and J3; but in J3 there was no hiatus at 50 cm. Much of the ash in J3 and J4 was in concreted and partly crystallized lumps; bone-splinters were encrusted with calcrete. This could have been due to the penetration of a little rain into the cave during the long hiatus; or by urine or other liquid on the embers. Ash-layer I did not extend into J4; in its place at 40–49 cm there was a large slab of dung-floor with chips of bone and stone, but very few twigs, reeds or seeds; the dung is much decomposed and contains less fibre than pieces from the Upper Occupation. In J4 the top of the ash was at 49–50 cm, which concords with Level II. In H4–E there appeared at 44 cm fine grey earth with white pockets. In J5 the Upper Occupation was thinning; its base was at 24 cm in J5 and up to 15 cm in J6, and below it was pinkish dust. This would be natural accumulation mixed with some debris, vegetable matter, seeds, one sherd and other objects from J5–D. At 40 cm the pinkish dust became markedly pinker, and there were a few bones and stone flakes probably derived from the Lower Occupation. In J6 there was probably nothing from the Lower Occupation; between 20 and 40 cm the earth was nearly sterile, with a few leaves and twigs down to 25 cm, probably from the Upper Occupation. Below 40 cm there were only tiny bone-fragments, probably brought in by carnivores. In J7 there was hardly anything below 10 cm which could have been humanly deposited.

The surface of Ash-layer II, which had partly coalesced with III, was at 49–51 cm. In J4–E, on its surface beneath the dung-floor, was a thin black layer with charcoal-points. The layer consisted of pockets of white ash interspersed with grey dust with high ash-content; in the south-east corner of J2 there was a separate pocket of ash. In the white and grey material there were flakes of imported stone and very many bone-splinters; wood and seeds at this level are doubtfully associated and may have worked down from above. In the inner part of J2 there was no hiatus above 88 cm; in the outer part and in J3 the ash became pockety at 60–62 cm, and at 70 cm yielded to grey dust with many rock-spalls. In J3 pink dust was appearing above 80 cm, and between 80 and 90 cm occurred all over J3–I, with still some bone-splinters but very few stone artefacts. In J4 there was a sharp break at 68 cm between white ash and pink dust. In H4 ash started at 50 cm; about half-way across the square and in a diagonal line towards the south-east corner it abutted against grey earth with a little vegetable-material. On the south-west pink dust appeared at 60 cm, on the east at 63 cm; it contained very small bones but hardly any artefacts. At 67 cm was a nest, perhaps of a small mammal and probably older than Level II. Between 73 and 76 cm was another hearth (Ash-layer III). So probably there had been two ash-layers which partly coalesced in row J; Level II was generally at 50–60 cm; III from about 72 cm to below 80 cm in places.

An ash-layer which I have called IV was distinguishable in J4 at 80–82 cm, separated from Level II by 12 cm of sterile pink dust. Layer IV yielded large pieces of charcoal, some bone chips and very few burnt stones. Its base was at about 85 cm, and it overlay 3 cm of dark brown dust which rested on fine, bright red sand. In J3 there was no sign of Layer IV; so the ash in J2 down to 88 cm was probably a deep pocket from Layer III.

At the base of J2–I, at about 90 cm, there appeared towards the outside fairly large stones among grey earth with large rock-spalls. In J2–J they began to bank towards the cave-mouth. They suggested a wall; but as there was little occupation at this level, they may have been natural fall.

A thin ash-layer at 90 cm in J4–I may be designated Ash-layer V; it was separated from Layer IV by bright red sand and a large stone. Below it were large slabs and pockets of nearly sterile red sand; it was impossible to dig deeper. In J3–J there was only red sand, with no sign of Ash-layer V. In J2 there were traces of ash at 92 cm on one of the large stones; it may have been derived from Ash-layer V in J4 but did not look to be *in situ*.

In the west of J2 and the east of J3 we were able to excavate deeper into pink sand, unhindered by fallen rocks. The sand contained many rock-spalls, and a few stone flakes, bones and pieces of charcoal. At 112 cm there was a large pocket of charcoal (Ash-layer VI), and at 117 cm a line of ash (Layer VII) which dipped eastward along a rock-slab to 126 cm. This layer yielded some stone flakes, bone-chips and a date of 22990 ± 310 (Pta–966).

It was impossible to dig lower owing to fallen slabs. There is no indication whether these may have covered a Middle Stone Age horizon.

FINDS IN THE UPPER OCCUPATION

The upper occupation-layers, down to about 40 cm, yielded a good collection of artefacts and of objects introduced by man or by nature (e.g. leaves blown in). The extreme dryness of the cave ensured that even easily decomposed vegetable-material had survived. Animal material, except bone and compressed dung, did not occur and had presumably decayed by bacterial action. We might have expected hide or skin, but no pieces were recognized; nor was egg-shell seen, though there were many pieces of mollusc-shell. But the excellent vegetable collections permit argument from negative evidence. There was no trace of mats tied with lianes, but it is possible that reed-floors were tied with sinews which have disappeared. Materials for fastening are unsatisfactory; twine and rope are fragmentary, and there is no trace of glue, for instance, for making composite arrows. Thus the picture we recovered of life 4 000–1 000 years ago is one-sided; but as this is the first publication of a cave-excavation in a Natal coastal valley, it presents an ecological picture for which at present no parallels are forthcoming. Most valleys behind the Natal coast are not easily accessible; but other productive caves may in due course be discovered in this zone.

Stone Artefacts

The stone-industry is microlithic; artefacts were not abundant. Consequently, a statistical table by levels is meaningless, and no obvious chronological development can be traced.

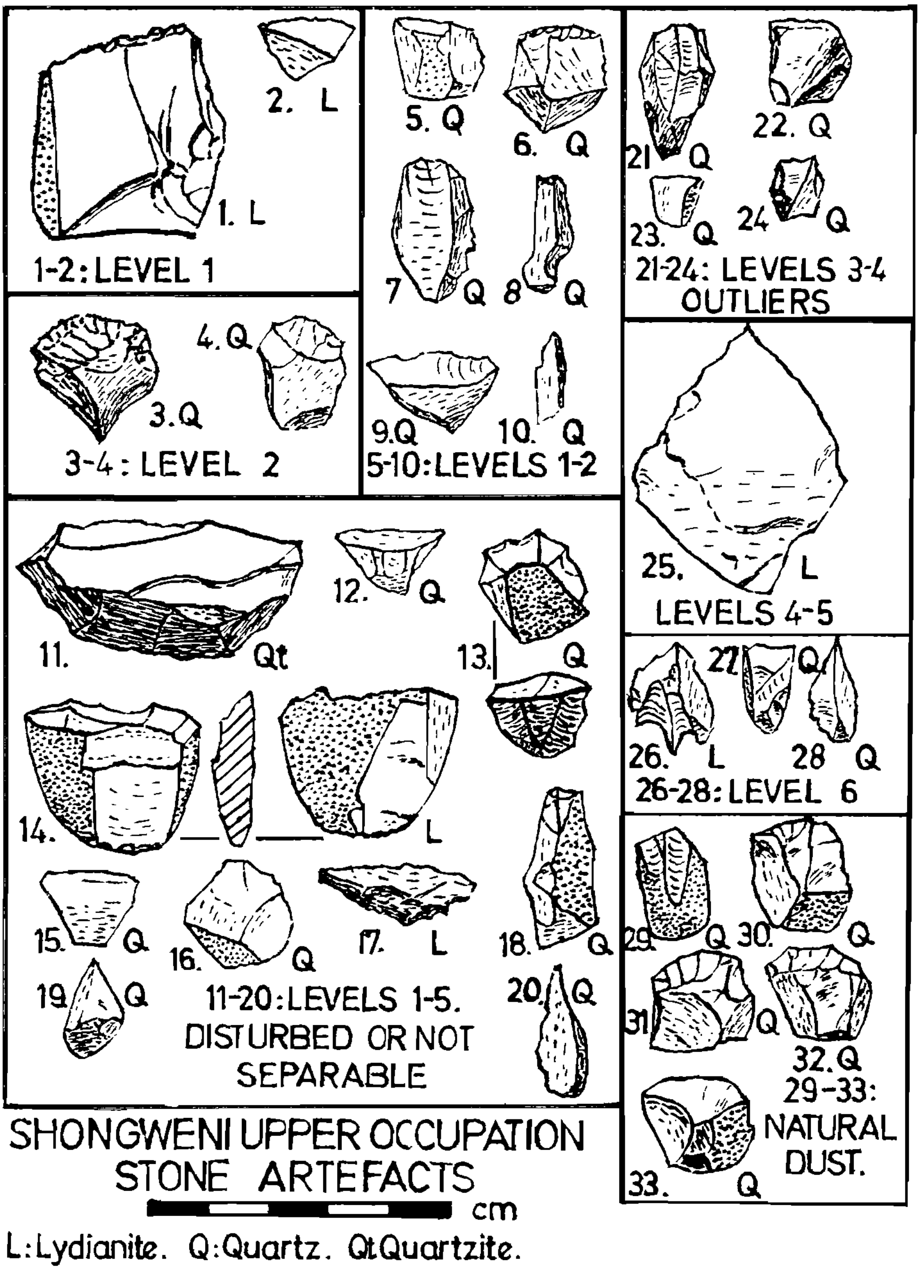
All workable stone had to be brought to the site. Four types of rock were used:

(*a*) Occasional quartz pebbles would be available in the local quartzite, and there would be many in the river. Pebbles are more satisfactory than unrolled vein-quartz, because by rolling weaknesses and fractures become evident, and a rolled pebble normally has a homogeneous crystal-structure. For cores see fig. 5.13 and 29.

Fig. 5. Stone artefacts from Upper Occupation. →

1. Utilized flake, J4–A.
2. Transverse arrowhead ?, J4–A.
3. Thumbnail-scraper, J2–A lower
4. Thumbnail-scraper, J2–A lower.
5. Chisel, G5–A.
6. Thumbnail-scraper, F5–A.
7. Chisel, G4–A.
8. Microblade, F5–A.
9. Crescent, G4–A.
10. Microblade, F5–A.
11. Large crescent, J5–C.
12. Chisel, H4–B.
13. Microcore, H4–B.
14. Core-chopper on coastal pebble, H4–C
15. Chisel, H4–C.
16. Thumbnail-scraper, J5–B.
17. Microblade, H4–C.
18. End-scraper, J5–B.
19. Point, J3–B.
20. Microblade, H4–A.
21. End-scraper, J4–C.
22. Chisel, J4–B.
23. Chisel, J4–C.
24. Chisel, J4–C.
25. Point, J2–C.
26. Barbed and tanged arrowhead, J4–D.
27. Chisel, J4–D.
28. Point, J4–D.
29. Microcore, F5–B.
30. End-scraper, J6–D.
31. Thumbnail-scraper, J6–C.
32. Thumbnail-scraper, J6–D.
33. Chisel, J7–B.

(*b*) Lydianite was not available locally, though there were probably a few pebbles in the river. The nearest outcrops would be 30–40 km inland, where Ecca shales outcrop. There are also downfaulted outcrops along the coast. In H4–C was found a flaked flat coastal pebble, in H4–D a flake also from a coastal pebble.


2. L
1. L
1-2: LEVEL 1
4. Q
3. Q
3-4: LEVEL 2
5. Q
6. Q
7 Q
8 Q
9. Q
10. Q
5-10: LEVELS 1-2
21 Q
22. Q
23. Q
24 Q
21-24: LEVELS 3-4 OUTLIERS
25. L
LEVELS 4-5
11. Qt
12. Q
13. Q
14. L
15. Q
16. Q
17. L
18. Q
19. Q
20. Q
11-20: LEVELS 1-5. DISTURBED OR NOT SEPARABLE
26. L
27 Q
28 Q
26-28: LEVEL 6
29 Q
30. Q
31 Q
32. Q
33. Q
29-33: NATURAL DUST.
cm

SHONGWENI UPPER OCCUPATION STONE ARTEFACTS

L: Lydianite. Q: Quartz. Qt Quartzite.

(*c*) Dolerite was available locally and as pebbles but is difficult to work. Though a few cores and flakes were found, there are no artefacts.

(*d*) Local quartzite is very difficult to fashion into small tools, though often used for massive pieces in the Acheulian and Sangoan industries. Very little was found at Shongweni.

TABLE 1

Upper Occupation

	QUARTZ	LYDIANITE	DOLERITE	QUARTZITE
Cores	18	5	3	0
Flakes	74	72	8	2
Unworked chips . .	2	44	7	0
Shaped tools . . .	46	10	1	1

There are four utilized flakes without definite shape (fig. 5.1). Of shaped pieces the commonest are thumbnail-scrapers (19: fig. 5.3, 4, 6, 16, 31, 32) and slightly elongated end-scrapers (4: fig. 5. 18, 21, 30). These occurred in all levels except Level 1, which was much eroded; all were made of quartz. Fairly common are pieces which are probably chisels, possibly transverse arrowheads, with traces of wear on the blade (16: fig. 5.2, 5, 7, 12, 15, 22, 23, 24, 27, 33); they are of either quartz or lydianite. Three pieces of rather similar shape I have classed as crescents, two of quartz and one large one of quartzite (fig. 5.9, 11). Only one quartz piece, from Level 6, can be described as a side-scraper. There are six probable points, rare but from nearly all levels (fig. 5.19, 25, 28), four of quartz and two of lydianite.

A broken barbed-and-tanged arrowhead of lydianite (fig. 5.26) from Level 6 is of particular interest, because these objects have been considered recent and have been used to trace the retreat of the Bushmen westward from the Drakensberg in the nineteenth century (Humphreys, 1969), However, Carter has found them in excavations at Belleview and Moshebi's Shelter north of Matatiele (Carter 1969; Carter & Vogel 1974), in layers dated to the last centuries B.C. and the first centuries A.D.[5] There is one from the Mfongosi area of the middle Tugela valley. They have also turned up on the coast, three unstratified from Port Shepstone, three from a midden with Wilton-industry at Ilfracombe station, two from a destroyed site at Scottburgh with Wilton and Smithfield types, one perhaps from the lower Mzimkulu valley, and one unassociated from Umgababa ilmenite diggings (Walsh 1960). The piece from Shongweni is the earliest approximately dated example (see fig. 4 for dates of Level 6).

Finally, there are six probable microblades, such as could well have been struck from some of the microcores found. Four are of quartz (fig. 5.8, 10, 20), one of lydianite (fig. 5.17) and one of dolerite. It is not certain that any of them occurred below Level 2; but this may be due to chance, because the type is simple, and there are several from the Lower Occupation.

Pottery

In all, 76 sherds were found, all in the Upper Occupation and none below 40 cm. Small sherds could have slipped downward in the loose earth; but it is unlikely that sherds of more than 2 cm maximum dimension would have been displaced. There were sherds above this size in all four spits: in Level 6 (see fig. 4), from J4–D of 5,0, 3,3 and 2,7 cm; from J5–D of 6,5 cm; from J3–D of 4,0 and 3,3 cm; from J2–D of

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[5] Belleview, between 1590 ± 55 (Pta-291), and 2330 ± 60 (Pta-292). The oldest at Moshebi's Shelter is from spit 4, dated 2180 ± 43 B.P. (Pta-319).

3 cm. It seems therefore that pottery was known throughout the Upper Occupation, from about the beginning of the second millennium B.C. This date is much earlier than any other in South Africa for pottery. In North Africa and the Saharan zone pottery occurs as early as the seventh millennium B.C. (e.g. 8410 ± 130 (MC–285); 7100 ± 180 B.P. (Gif–1821)). The knowledge of it was diffused to north Kenya (Robbins 1972), where dates as early as 7960 ± 140 (N–813) and before 8420 ± 165 B.P. (N–1100) are reported. The earliest dates for pottery from Omo are of the fourth millennium B.C. (L–1203 G and K; Butzer *et al.* (1969)). In southern Kenya there are pottery-sites of the early first millennium B.C. (Y–1398), and there are several similar dates for the stone-bowl culture (N–653, Y–91, N–651). There is one similar date for pottery in a late stone-age context from Tanzania (2640 ± 120, N–493), but a wide spread of dates from 3420 ± 120 and 3200 ± 120 onwards (N–894, N–899) from an iron-age site at Katuruka is thought suspect (Sutton 1972). There are no dates for pottery earlier than a century or two B.C. in a purely late stone-age context from Zambia or Rhodesia. There is no suggestion that the pottery from Level 6 at Shongweni is iron-age; but it remains problematical whether a Wilton-people knew how to make pottery, or whether the Shongweni-group, with their pottery and cultigens (see below), were immigrants ultimately from far north.

Most of the sherds are coarse and undecorated, dark grey to black outside, some reddish, some sooted inside. It has been impossible to assign them to individual vessels, and probably several are represented. They seem to come from large pots, mostly 8–10 mm thick; one, probably a base-sherd, is 17 mm thick.

Several sherds from J5 A–C (apparently covering without stratification Levels 2–5) seem associated. They belonged to a rather finer large pot 5–8 mm thick, black on both faces. There may be pieces of a similar or the same pot from J2–B and J3–B (Level 3).

A rim from G3–B (fig. 6.8) and a sherd from G3–A (Levels 1–2) seem to have come from a small black vessel.

Only six sherds are decorated, all with parallel scorings set horizontally or diagonally (fig. 6.4–6, 9, 10), on or near the neck. The decoration looks sophisticated for pre-Bantu pottery. Two of them (fig. 6.4 and 10) are from H4, where there was deep disturbance and a pit containing sorghum dated 730 ± 60 B.P. (Pta–1060). Square G3 (fig. 6.5–7) had no direct evidence for disturbance; but it appeared that the floor of Level 1 (still within the Bantu-period, cp. Pta–1059) had been broken up. The only decorated sherd from a probably undisturbed layer (J4–D, Level 6) is fig. 6.9); there were other sherds at this level, one as much as 5 cm across; the scored piece may be really ancient, but it is possible that it had slipped down a small hole.

Twelve sherds were found on the surface, seven of them at the back of the cave by Mr J. MacDonald, and five by Mr Gavin Ross, it is uncertain where. Some may have come from one of the two pits which had been dug earlier; but they are all fairly large and are unlikely to have been missed, especially by Dr Hinchy. It is more likely that they were derived from a surface-occupation now eroded; the date for the sorghum-pit in H4 suggests a former level above Level 1. All these sherds could have come from the same vessel, if it had been irregularly made and fired; it is more likely that two or three pots are represented. All are 7–12 mm thick. They vary in colour from black on both faces to grey outside and reddish inside. There are four pieces of rim, probably

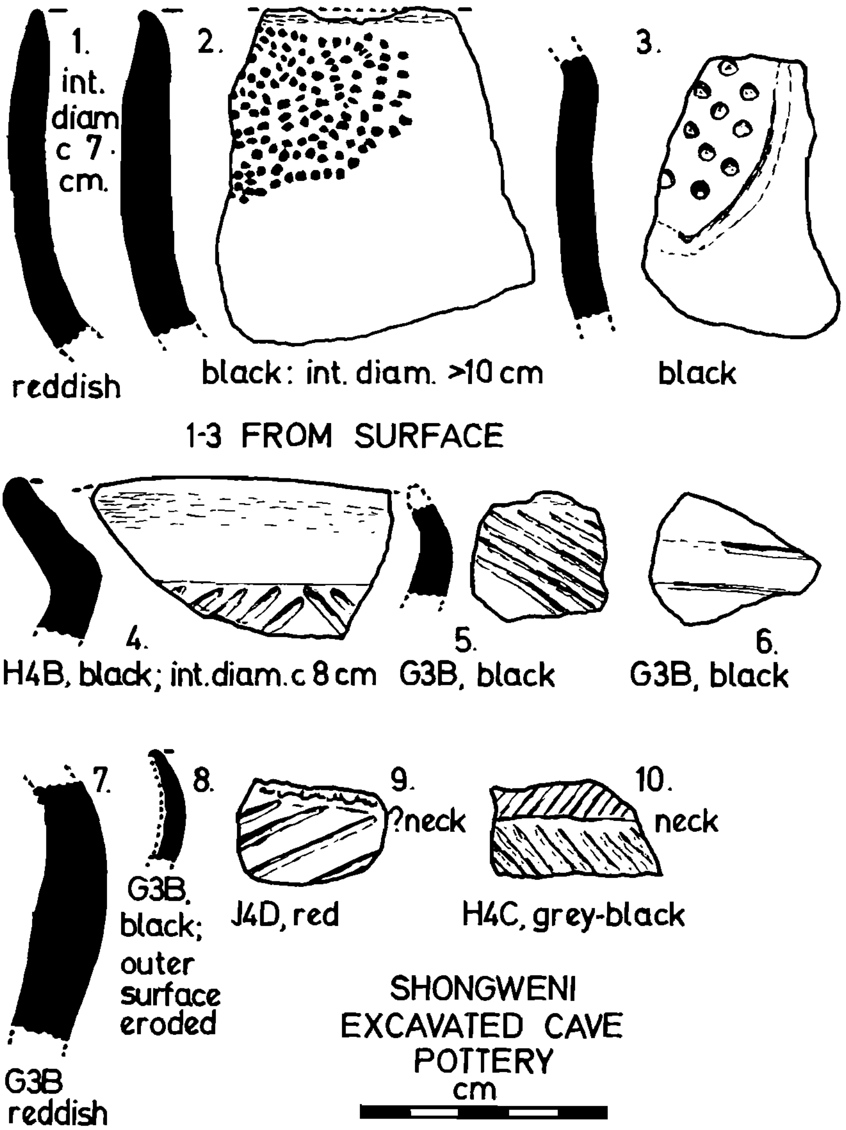
1.
int.
diam
c 7·
cm.
2.
3.
reddish
black: int. diam. >10 cm
black
1-3 FROM SURFACE
4.
H4B, black; int.diam.c 8 cm
5.
G3B, black
6.
G3B, black
7.
8.
G3B,
black;
outer
surface
eroded
9.
?neck
J4D, red
10.
neck
H4C, grey-black
G3B
reddish
SHONGWENI
EXCAVATED CAVE
POTTERY
cm

Fig. 6

from one or more bowls (fig. 6.1–3); two are ornamented with clusters of jabs, made probably by sticks but of different sizes. I know no parallels to such ornament from Natal.

Shell and Beads

There are about fifty pieces of marine mollusc-shell, probably *Perna perna*, and one small *Thais capensis*, perhaps brought in a bunch of mussels. Mytilids would grow on the rocks at the south end of Durban Bluff, about 29 km away in a direct line down the Mlazi valley, but rather farther by a route avoiding marshes at the head of Natal Bay. During the Upper Occupation sea-level would probably have been as high or slightly higher than today (Davies 1970).[6] Mussels are easy to collect, and may have been brought to the cave as food or have been eaten on the beach and their shells transported home. Contact with the coast has been indicated above by the use of two coastal lydianite pebbles.

Seven small pieces came from the Lower Occupation. Three from J2–E lay close to the contact. Two from J2–G and two from H4–F were from Level II, but identification as *Perna perna* is uncertain; they may be from freshwater-mussels or may have been stratigraphically displaced. Contact with the coast during the Lower Occupation is unlikely. Level II was older than 11870 ± 130 (Pta–682), at which date Natal Bay was probably dry.[7] The position of the open coast is uncertain, because the submarine contours of the lower Bluff Sandstones are unknown; nor is it certain whether rock would have been exposed, as the low-level shore may have been sandy.

There were many fragments of terrestrial mollusc. All are small; shells seem to have been broken to extract the meat, which is edible but rather tough. Except for one piece of *Tropidophora ligata*, they are all Achatinids, mostly too small to identify specifically; Mr R. N. Kilburn noticed two pieces of *Metachatina kraussi* and one of *Achatina granulata*. They would have been common in the neighbourhood and could be easily collected. There are about 140 pieces from the Upper Occupation; about 35 pieces of Achatinid and 3 unidentified were associated with the hearths of Levels I–III of the Lower Occupation.

About twelve pieces of shell with much nacre had probably come from freshwater-bivalves which would be locally available. None could be identified with certainty.

Seven beads were found, almost certainly made of freshwater-mollusc; they are 6,5–9 mm across (fig. 7.7). All except one were at the south end of the cave and above 20 cm. According to Mr Walsh Dr Hinchy found about six beads. Though Bushmen have preferred ostrich-eggshell, where there were no ostriches beads were made of other white material, such as mollusc-shell or calcareous vein-infilling (pieces from a burial at Mfongosi, Natal Mus. 25/36, coll. W. E. Jones; see Davies 1957).

Worked bone

Mr P. L. Carter of Cambridge has very kindly examined nearly all the bones from the excavation. He writes as follows:

'All the bones submitted for analysis were small fragments. Few complete bones were recovered, and many specimens were unidentifiable. The fragmentary nature of the sample is typical of bone-refuse from many archaeological sites, and it has been assumed that all bones identified had been brought to the site by the prehistoric inhabitants [but see p. 630]. 226 fragments were identifiable.'

Mr Carter set aside a small number of bones on which he desired a second opinion. These were sent to Dr R. G. Klein of the South African Museum, who largely con-

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[6] A date is published on peat at −7 m in St Lucia Lake, 3960 ± 60 (GrN–4535). I find it difficult to accept this date, in view of known trends in holocene sea-level in South Africa and elsewhere. Other dates from St Lucia are awaited.

[7] There are no accurate dates for the earlier part of the Flandrian Transgression in Natal: 8420 ± 140 (GaK–1389), for wood at −29 m in the Mgeni estuary, probably waterlogged and deposited on a lagoon-bottom, Maud (1968); 4800 ± 110, quoted with no lab. no., black clay at −9 m almost certainly submarine, from Natal Bay, King (1972*b*).

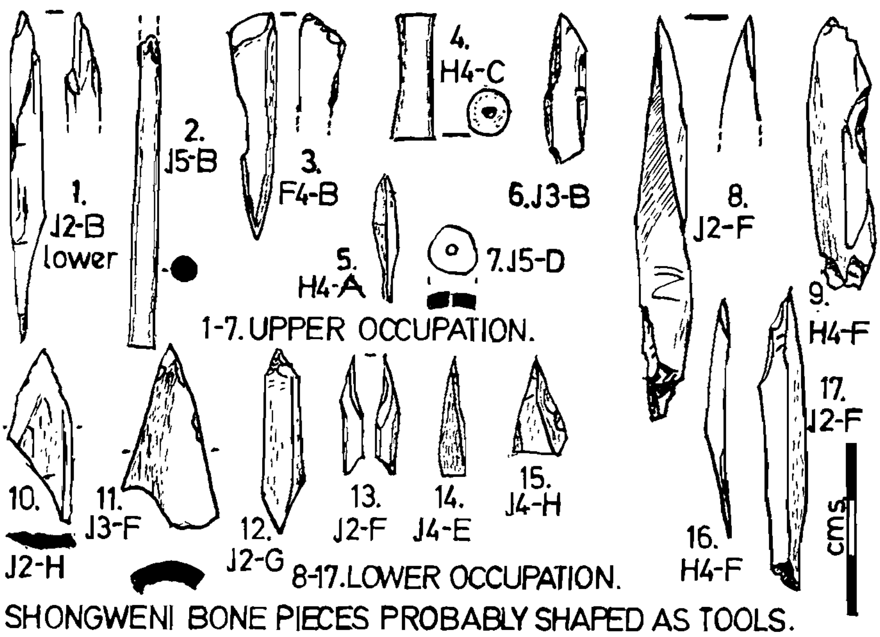
1.
J2-B
lower
2.
J5-B
3.
F4-B
4.
H4-C
5.
H4-A
6.J3-B
7.J5-D
1-7. UPPER OCCUPATION.
8.
J2-F
9.
H4-F
10.
J2-H
11.
J3-F
12.
J2-G
13.
J2-F
14.
J4-E
15.
J4-H
16.
H4-F
17.
J2-F
8-17. LOWER OCCUPATION.
cms
SHONGWENI BONE PIECES PROBABLY SHAPED AS TOOLS.

Fig. 7. Worked bones from Upper and Lower Occupations.

1. Point slightly smoothed at each end, probably tanged for hafting.
2. Shaped rod (? link-shaft), cut at butt, broken towards point.
3. Chisel-ended splinter.
4. Smoothed bobbin-shaped piece, shallow perforation at each end.
5. Point made from splinter, trimmed at end.
6. Point slightly smoothed at end.
7. Bead (one of several), nacre.
8. Point, sharpened by small extra cut, perhaps tanged.
9. Point, with marks of wear on end and butt.
10. Point, slightly worn on edges.
11. Point, trimmed.
12. Point, trimmed on one (probably upper) end.
13. Point, trimmed at one end.
14. Point, slightly polished.
15. Point, trimmed.
16. Point, slightly trimmed.
17. Point, trimmed at end.

firmed Mr Carter's identifications but added a few species, which in the list below are marked with an asterisk. Dr Klein further submitted most of the bird-bones to his colleague Mr G. Avery, whose report on them is given at the end.

The following genera and species occur in the Upper Occupation. The numbers in the various spits are given in Tables 1 and 2 in the Appendix. Mr Carter has in his tables lumped the bovids together into three columns; so assignment of individual genera to the Upper or Lower Occupation has depended on Klein's identification of a very small sample. Dr Klein's reservations regarding certain species also are given in the Appendix, with cross-references below.

Small antelope (body-weight less than 28 kg):

Cephalophus sp. (duiker); APP A

Ourebia ourebi (oribi), identified with certainty by Klein

cf *Raphicerus campestris* (steenbok); APP B
Oreotragus oreotragus (klipspringer), identified with certainty by Klein
Medium antelope (body-weight 28–135 kg):
Redunca fulvorufula (mountain reedbok), identified with certainty by Klein
cf. *Tragelaphus scriptus* (bushbuck); APP C
Large antelope (body-weight 135–450 kg):
?*Tragelaphus strepsiceros* (kudu); APP C
* ?*Tragelaphus angasi* (nyala); APP C
Potamochoerus porcus (bush-pig)
Papio ursinus (Chacma baboon)
**Cercopithecus aethiops* (vervet monkey)
*Small insectivore
Hyracoid (dassie); APP D
Procavia capensis
Rodent (unspecified)
Lepus sp. (hare); APP E
For droppings probably of hyaena, see above p. 634.
Reptiles; APP F

Birds. Carter identified bird-bones in both the Upper and the Lower Occupations. On a small sample from the Upper Occupation only Mr G. Avery has reported:

'Large raptor (eagle/vulture): A spit 2; B spit 2; C spit 1; D spit much disturbed 1
Small raptor (hawk/falcon): B spit 1.
Francolinus sp.: B spit at back 1
Sturnidae gen. et sp. indet.: B spit 1

'Francolin and starling are species which might be expected to occur through trapping or snaring. . . . It would be most interesting to know whether the large raptor is represented only by phalanges; this might well be indicative of activities requiring the skinning of birds prior to usage.'

Mr Carter has added the following comments on the faunal assemblage (see Tables 1 and 2 in Appendix):

'Table 1 shows the number of identifiable fragments (but see note to the tables). If relative numbers be taken to indicate the proportion of different animals eaten (but see Payne 1972), antelope, particularly those with body-weight less than 28 kg, provided the bulk of the meat eaten. However, the contribution made to the economy by other animals is not inconsiderable (Upper Occupation 33%, Lower 36%); clearly a wide variety of animals was utilized.

'ECOLOGY. There is nothing to suggest that the prehistoric fauna differed in any way from that of the early nineteenth century; all the species identified could have come from the immediate vicinity.

'HUNTING METHODS. No direct evidence of hunting methods were observed, but some speculation is justified. Deacon (1972) has argued that faunal assemblages dominated by small antelope and associated with Late Stone Age material in the Eastern Cape would require the use of trap-lines to ensure any measure of consistent success. The Shongweni fauna is similarly dominated by the presence of small antelope (Upper Occupation 44%, Lower 40%). [For probable remains of snares and arrows, see pp. 640, 654.]

'CHANGES WITH TIME. Although antelope and fish occur in all spits [except the fragmentary Levels VI and VII], other species are more restricted: carnivores and tortoise only in spits E, H and I; birds and reptiles in H and above; bush-pig in D, F, G and H; baboon in A, D and E; crab in G.

'Whether these changes reflect sampling-bias, or changes in populations exploited owing to changed environment or dietary preference cannot be established. In view of the small number of specimens, sampling bias cannot be ruled out.

'EXPLOITATION-PATTERNS AND SEASONALITY. Although the sample is very small, it may be significant that the Upper Occupation contains more immature animals (10%) than the Lower (2%). This difference may reflect changes in the season of occupation. The higher proportion of younger animals in the Upper Occupation may indicate change in exploitation-pattern, as observed in eastern Lesotho and the East Cape and postulated for Natal (Carter 1969, 1970; Deacon 1972). The possibility of seasonal change in the patterns between the two occupations need not conflict with the fact that there was no significant change in the food-animals exploited during the whole time that the site was occupied.'

Bones of fish occurred, not very frequently, all through the Upper Occupation and the upper part of the Lower as far down as J2–J, i.e. to one metre depth, into the sterile pink dust beneath Level III. There are 31 from the Upper and 46 from the Lower Occupation. Nearly all are vertebrae, mostly 4–6 mm across, a very few up to 8 mm. Though one cannot deduce the size of the fish from the size of the vertebrae, these figures suggest that small fish were caught, probably river-fish. Except for one probable hook (fig. 9.13) there is no indication how they were caught. Traps of wicker or similar material may have been used, or perhaps the fish were stranded by floods.

A few of the fish-bones were sent to Mr Carter and to Dr Klein, but none could be identified.

Most of the bones are mere chips. But in view of the poverty of the lithic industry, I would suggest that a few may have been used as weapons or tools, especially as arrow-points anointed with poison. Mr Carter is sceptical regarding there being any shaped artefacts among the pieces that he saw; but I had selected a few suggestive pieces for exhibition and these had not been sent to him. I chose particularly pieces which seem to have fine trimming close to the point additional to the major cuts, and pieces which seem to have been trimmed to a rough tang towards the butt. A good many chips are sharply cut, and narrower than would be necessary to obtain marrow; some of these may be waste discarded while paring down a bone to make an artefact.

There are more splinters suspected of having been shaped from the Lower than from the Upper Occupation. From the Upper, two pieces are polished and so indubitably artefacts, a broken rod (fig. 7.2), perhaps a link-shaft, and a bobbin-shaped piece with shallow hole at each end (fig. 7.4). Seven others are probably rough points (fig, 7.1, 5, 6). One splinter has a chisel-end and signs of wear (fig. 7.3); and there is one fragment of long bone longitudinally split, with concave face partly flaked; these may have been small scoops.

Vegetable material, uncultivated

All through the Upper Occupation there were abundant twigs, pieces of wood, seeds, reeds, liane, grass and leaves. Many leaves are rotten, so there survive only pieces of veins; perhaps much of the wood has disintegrated to fibre. But a great deal is well preserved. Wood and twigs were brought to the cave as fuel or to make artefacts (to be described below). Some sticks are burnt at one end, and large pieces of charcoal were found. Reeds, grass and leaves were brought to spread on floors. Grass was sometimes used to make rope, and some leaves seem to have been chewed. Lianes were uncommon; they were not found tying anything, so they may have been brought in fortuitously. Many seeds were collected apparently for food.

Mr J. Pienaar and Dr J. H. Ross of the Botanical Research Institute in Pretoria have kindly identified a number of pods and seeds; identifications have kindly been made also by Dr Gordon-Gray and Dr Hilliard of the University of Natal, and by Mr R. G. Strey of the Natal Herbarium, Durban. Unfortunately, much remains unidentifiable, because South African botanists have had little experience of archaeological material, dry and often distorted; and in these civilized days little light can be thrown by ethnological evidence, because Bushmen are extinct in Natal and Bantu-speaking tribes are no longer so dependent on wild fruits and nuts. Nor is there any specialist in local wood-structures who could identify twigs and charcoal. However, it may be assumed that the flora at least at the time of the Upper Occupation was modern. The Lower Occupation extends back to the peak of the Last Glaciation, when temperatures were probably considerably lowered throughout South Africa and rainfall may have been different. Consequently, specialist identification of charcoal might indicate a change of flora, and there may be significant pollen in the natural accumulations of pink dust.

Apart from charcoal, nearly all the vegetable-material came from the Upper Occupation.[8] Some of the pieces from the Lower had almost certainly been trampled in from above or had been dragged into burrows. Seeds and pods, being hard and resistant, may have survived from the Lower Occupation *in situ*; and a few twigs seem more decayed than most of the material from the Upper.

Wild plants identified and mostly collected for ingestion (food, medicine, etc.; see Watt & Breyer-Brandwijk 1962):

Strelitzia nicolai Reg. et Koerner. Numerous pod-fragments; beans edible.

Sclerocarya caffra Sond. (= marula). Numerous fruit-pods; edible.

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[8] Pieces from the Lower Occupation strata:

H4–F. Two scraps of *Sclerocarya caffra* and one of *Dialium schlecteri*. Perhaps derived, as the base of the disturbance in part of H4 may have been as low as 49 cm. See below p. 649.

J2–E. Especially pods and seeds had intruded into the pink dust separating the two occupations, down to 46 cm. Below this there were occasional seeds as far down as J2–H.

J2 F–G. Several pieces of decayed wood and one thorn; one piece of wood in J2–H. Some of the wood had been split lengthways, one or two perhaps burnt at the end. All these pieces were in the outer part of the square, and could have lain in a pit dug from above; but their condition is much less sound than the wood at higher levels.

J2–K, below 100 cm. A large piece of pod of *Strelitzia nicolai*, almost certainly intrusive, either down a burrow which we did not detect, or it was displaced during excavation.

J3–E. One twig below 44 cm.

J3–K. Two seeds, one of *Strychnos*.

J4 E–F. A few seeds, thorns and scraps of reed and twig; probably intrusive.

J4–G upper. One twig, split with a rather blunt tool.

J5–E. About ten reeds, two pods, twigs and leaves. Almost certainly trampled in from above.

J6. The Upper Occupation rested on sterile sand at about 15 cm. A few seeds, reeds, twigs and leaves were found lower. They had probably been derived into the unoccupied back of the cave from the lower levels of the Upper Occupation. There is no evidence that they had belonged to the Lower.

Strychnos sp. (= monkey-apple). Pieces of rind and apparently numerous seeds. Poisonous but edible after treatment.

Harpephyllum caffrum (= kaffir plum). 31 stones together in J4–D, otherwise few stones. Edible.

Dalbergia sp. Probably some pods but not very common. A legume; beans probably edible, bark used medicinally; thorns may have been collected (see below).

Schotia brachypetala. Many pods, almost certainly of this legume. Beans edible and can be used medicinally. A number of leaves identified. A common tree in the coastal bush, probably growing close to the cave.

Dolichos sp. A few pods identified with certainty, and there may be many more. Beans edible.

Milletia grandis (E. Mey.) Skeels. A number of pods identified.

Bauhinia tomentosa L. About a dozen pods. Bean probably edible and used medicinally.

Ekebergia capensis Sparrm. Only five specimens of nut identified; probably edible.

Grewia sp. Only two pieces identified. Fruit edible but astringent. Probably not purposely collected.

Bersama sp. Only one piece, probably not purposely collected; apparently medicinal.

Drypetes sp. Only three pieces. Nut, one sp. edible.

Sapium integerrimum. One piece.

Toddaliopsis sp. Only one piece, probably not purposely collected.

Dialium schlecteri Herms. Only seven or eight pieces. Probably edible.

Argyrolobium sp. Very rare, probably not purposely collected.

Combretum sp. One piece of fruit and one leaf; probably not purposely collected.

Commiphora sp. Bark identified. Can be used medicinally, and its gum is used for fixing arrowheads.

A number of pads were found, 2–3 cm across, of extremely contorted fibre. Dr Stewart of the Natal Parks Board wrote that they are unlikely to be animal-dung. When I unrolled two, I found that the fibres are up to 15 cm long and apparently cut at one end, one probably ending in a deteriorated stalk. They seem therefore to be strips of bark or liane or leaves which were chewed and spat out. This practice suggests some drug, but I have been unable to get an opinion what they might be.

Vegetable material, cultigens[9]

Six species of plants now cultivated were found in the Upper Occupation Level: three cereals, *Sorghum bicolor* L. *caffrum* or *roxburgii*, *Pennisetum americanum* K. Schum. and *Eleusine coracana* (L) Gaertn.; and three cucurbits, *Citrullus lanatus* (Thunb.) Matsumura & Nakai, *Lagenaria siceraria* (Mol.) Standl. and one unidentified (only one piece in J5–C, much heavier than *C. lanatus*, so that it sinks at once in paraffin). There are also several cucurbit seeds, in general not considered closely identifiable, though one from J5–D was identified as *C. lanatus*. These plants have been examined by Dr Gordon-Gray of the University of Natal and by Mr J. N.

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[9] This section has been rewritten by Mr J. Pienaar from my draft. I have added a few remarks to Mr Pienaar's draft when more radiocarbon-dates became available.

Pienaar of the Botanical Research Institute, Pretoria (by courtesy of Mr M. Wells); both botanists are convinced that the cereals were cultivated and not wild.

Most of the sorghum was found in the upper two spits, above 20 cm. There was a pocket of two heads and six panicles, one unthreshed, in H4–C from a pit; a date from the plant-remains is 730 ± 60 B.P. (Pta–1060), so the pit was dug probably later than Level 1. In three squares (H4–D, J3–D, J4–D) there were specimens in the fourth spit (30–40 cm), and in H4–E one panicle in the fifth at 40–44 cm. The disturbance in H4 may have extended below spit C and perhaps into spit E. The evidence from J3 and J4 is fairly good for a little sorghum down to Level 6, but it is possible that small panicles had been displaced. Sorghum occurred in several squares in the B spit (Level 2 or 3).

Sorghum was more abundant than the other cereals. There was a considerable pocket of *Pennisetum* in J2–A and J2–B, and stray heads down to the fourth spit (Level 6). There was much *Eleusine* in J2, perhaps in a pit dug from the lower dung-floor, and again occasional panicles occurred down to the fourth spit (three from J2–D, two from E4–D).

Nearly all the cereal panicles have been threshed. There were two unthreshed panicles of sorghum, in H4–B and H4–C. In H4–A was a sorghum-head with the culm broken just below the panicles, and in J2–B broken *Pennisetum* culms; their condition suggests threshing by beating on a stone or log. Some sorghum culms appeared, like many of the reeds, to have been cut with a sharp instrument.

According to Doggett (1970) the cultivated strains of sorghum, believed to be derived from *Sorghum verticilliflorum* (Steud) Stapf, are *S. arundinaceum* and *S. aethiopicum*, native from South Africa to the Upper Nile. 'Domestication started in the north-east quadrant of Africa. As a result of disruptive selection, a polymorphic population emerged, which soon diverged into the wild and cultivated crop as distinct species. People carried the cultivated sorghum to West Africa, taking the wild type across as a crop weed. Sorghum also moved down into East Africa, again with the crop weed, from where the crop and its weed were carried down into Central and South Africa by the Bantu peoples' (Doggett: 35).

This view is theoretical and unsupported by archaeological evidence. The origin of domesticated sorghum remains uncertain. The evidence that it had reached Shongweni before the arrival of Bantu-speakers is not conclusive, in view of the small number of pieces found in apparently undisturbed strata below Level 3. The date of Level 3 (1770 ± 60 B.P. (Pta–821)) is slightly earlier than any date so far recorded for the iron-age in Swaziland and Natal but could be fitted into the Bantu period.

Pennisetum americanum K. Schum. is supposed to have evolved from *P. purpureum* (Schumach.) Rot. These species are widely distributed in Africa. There was not much of it, none in Level 1. The grain is variable and nutritious, it is still cultivated by the Bantu-speakers.

Seeds of *Pennisetum*, considered to have been cultivated, were found in sherds from Silver Leaves, north-east Transvaal (Klapwijk 1974). The site has been dated to the third and fourth centuries A.D. It is suggested that the style of this pottery had not been introduced from the north but rather from Mozambique. This suggestion cannot be confirmed, as practically nothing is known about early pottery in Mozambique; but it would support the theory put forward in this paper that the cultivated plants and other cultural elements at Shongweni were derived from the north through Mozambique rather than west of the Lebombo Mountains.

Eleusine coracana (L) Gaertn. is thought to be derived from *E. indica* (L) Gaertn. f. This statement is only theoretical (Kennedy-O'Byrne 1957). According to Ross (1972) both species are widely distributed in Natal, and *E. coracana* is cultivated by the Tsonga in Zululand. Mr C. H. Stirton of the Botany Department in Pietermaritzburg, who is making a special study of *Eleusine*, has examined the specimens from J2–B lower (Level 3) and says: 'The specimens are definitely *E. coracana*. This species does not today grow wild in South Africa, and there is no evidence that it formerly grew wild there. So the plants were quite probably "cultivated".'

The cucurbits are recorded wild today in climates slightly warmer and drier than near Durban.

Citrullus lanatus (Thunb.) Matsumura & Nakai, or Tsamma-melon, is thought to be truly native only in the drier parts of South Africa and in South West Africa. It is quoted as growing wild also in the wetter parts of the Transvaal, near Johannesburg and in the Kruger Park (Meeuse 1962: 57–58), and in Natal (Ross 1972). It is now widely cultivated in South Africa. One of the pieces from Shongweni has a mottled pericarp; this feature is reported in both wild and cultivated forms. The dry pieces of pericarp are easy to distinguish from *Lagenaria siceraria* (Mol.) Standl.; they are less than 2 mm thick and hard on the inner side, while *Lagenaria* rind is rather soft and woolly inside.

Pieces of *Citrullus* pericarp were found in all four spits of the Upper Occupation, down to 40 cm, and indeed were more numerous between 20 and 40 cm than above. Though they might have been displaced downward, it seems likely that this fruit was in use from the beginning of the occupation.

Lagenaria siceraria (Mol.) Standl., the bottle-gourd, has for a long time been cultivated in South Africa; but it has been found wild in the Kruger Park and Swaziland, where escape from cultivation is unlikely (Meeuse 1962: 83–84). A botanist of Kew Gardens wrote that its wild ancestor is unknown. Specimens of pericarp from Shongweni were submitted to Dr T. W. Whitaker of La Jolla. He fully agreed with the identification, and wrote 'One shard is slightly curved and was probably varnished, suggesting it may have been used around the household. I have no personal knowledge of *L. siceraria* being reported from archaeological sites in Africa; but your finds tend to confirm current conjectures that *L. siceraria* is indigenous to Africa.' It appears that most of the remains on archaeological sites are American; it is reported from the Ocampo caves (north-east Mexico) in deposits dated to 7000–5500 B.P. It is suggested that it reached America by natural flotation,[10] probably across the Pacific (Whitaker 1971); gourds, washed up on a beach, were thrown out or planted on settlement-middens. It is not stated whether the earliest occurrences in Mexico and Peru had been artificially shaped. We must associate its occurrence at Shongweni with the earliest radiocarbon-dates for the Upper Occupation, from J2–D (3870 ± 60 (Pta–823) and 4060 ± 55 (Pta–1061)); no pieces were found in J2–D, but there was in the adjoining square J3–D a piece with concave neck and so artificially deformed. Gourd was found in burials in Njoro River Cave, Kenya, dated 2920 ± 80 (Y–91) (Sutton 1973: 79).

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[10] But for claim of *Arachis hypogaea* from a site of the fourth or third millennium B.C. at Ch'ien-shanyang (China), probably indicating trans-Pacific navigation, see report quoted by Chang in A. K. Gosh (ed.) *Perspectives in Palaeoanthropology*, Calcutta 1974, p. 276. This identification needs confirmation.

We found a good many pieces of pericarp, mostly in the upper two spits above 20 cm, but there were fourteen between 20 and 40 cm. One piece from F5–A and one from J3–D have a concave curve and so have been artificially deformed. No pieces are sufficiently characteristic to illustrate, but one seems to be the rim and part of the neck of a bottle.

Though of much later date, reference may be made to a record of the Dutch ship *Stavenisse* in A.D. 1686 that the Africans in Natal were cultivating three sorts of corn, calabashes, water-melons, pumpkins and beans (Chase 1968: 9).

Artefacts of Wood and Other Vegetable Material

Throughout the Upper Occupation much vegetable material was found, wood, reeds, leaves, grass and so on. As I have said (above p. 647), there was very little in the Lower Occupation; apart from some seeds, I am inclined to think that nearly all pieces from below the unconformity had been introduced by disturbance, and that during the unconformity the cave may have been exposed to moisture, which had rotted unresistant organic matter.

Some reeds, twigs and larger pieces of wood show signs of burning at one end. Others had been intentionally shaped. A very few of these are from the E-spit, at the top of the Lower Occupation:

(*a*) in J2–E one twig split longitudinally, two cut across and one diagonally; this square was stratigraphically sealed, so these pieces may belong to Level I;

(*b*) from H4–E, two twigs split lengthways, one of them probably a broken point with one face slightly concave (fig. 9.12), and one reed cut across; these may have been introduced by disturbance.

All the other pieces lay stratigraphically within the Upper Occupation or in nearly sterile dust containing only material from the upper layers.

Many twigs and a few reeds have been split lengthways along the grain (fig. 9.3); this would be easy with a sharp stone wedge. Many reeds and some twigs have been cut across (fig. 8.3) or cut partly through and broken (fig. 8.1, 8); presumably this could be done with a sharp stone flake; many of the chips, especially of lydianite, which we found could have been used in this way, and would probably show no scars on the blade. A few twigs have been sliced diagonally (fig. 8.4; 9. 10); they were probably purposely shaped, but there is no indication of their use; possibly they were to be stuck into the ground.

Some pieces appear to have been shaped as tools:

(*a*) Link-shafts for arrows, mostly broken, 4 and perhaps 7 (fig. 8.5, 6 and 7; 9. 15). These are well known from Bushman equipment, but most surviving examples are made of bone.

(*b*) Pointed splinters of wood or reed, at least 8 (fig. 8.2 ?; 9.1, 5, 6) and perhaps 12. In view of the poverty of the stone-work, these may have been used for arrows. Most typical is fig. 9.1, which has been split at one end to form a point, while, at the other end, the natural knobbly shape of the wood has been left, either to fix into a shaft or for use as a short dagger.

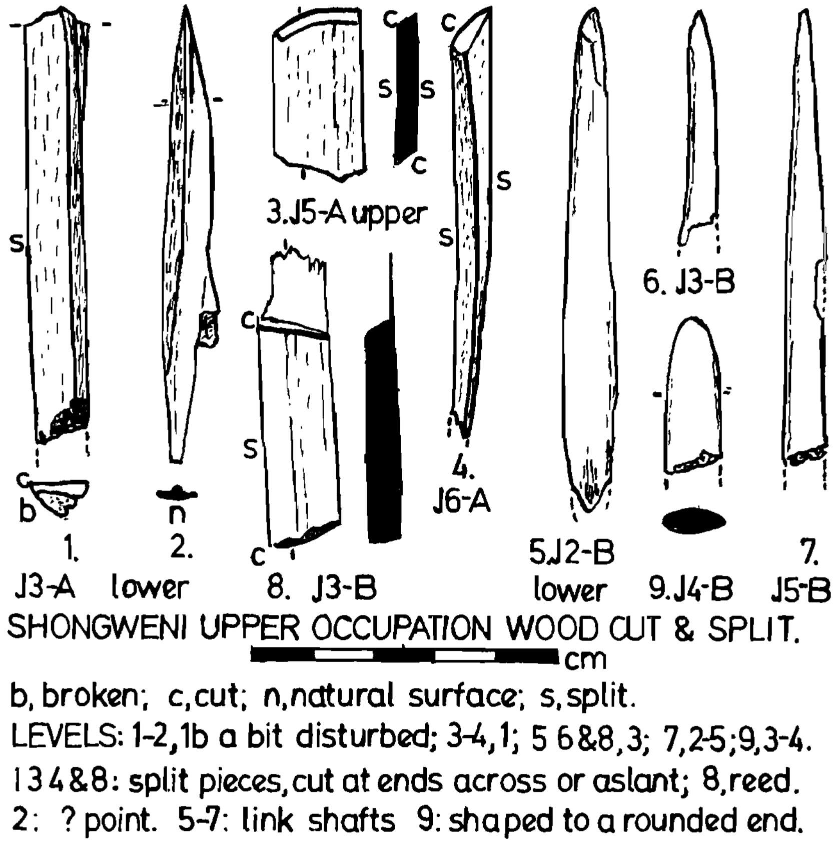
1. J3-A
2. lower
3. J5-A upper
4. J6-A
5 J2-B lower
6. J3-B
7. J5-B
8. J3-B
9. J4-B
b
c
n
s
SHONGWENI UPPER OCCUPATION WOOD CUT & SPLIT.
cm
b, broken; c, cut; n, natural surface; s, split.
LEVELS: 1-2, 1b a bit disturbed; 3-4, 1; 5 6&8, 3; 7, 2-5; 9, 3-4.
1 3 4 & 8: split pieces, cut at ends across or aslant; 8, reed.
2: ? point. 5-7: link shafts 9: shaped to a rounded end.

Fig. 8

(*c*) Sliced pieces cut to a blunt point (fig. 9.4, 8). Purpose unknown.

(*d*) Perforated pointed splinter, possibly a needle; and another perforated piece. Two or three other perforated pieces had almost certainly been insect-bored.

(*e*) Stick with two perforations (fig. 9.2). Purpose unknown.

(*f*) Barbed point (fig. 9.13). Probably a fish-hook.

(*g*) Piece shaped with rounded end (fig. 8.9); and probably another (fig. 9.9). Purpose unknown.

(*h*) Badly split piece, two-pronged with apparently some shaping on the end (fig. 9.7). May be natural; if intentionally shaped, purpose unknown.

(*i*) Long stick split to a triangular section (fig. 9.11). Possibly a blade.

(*j*) Long split stick, cut at both ends and apparently hollowed to a wide shallow groove (fig. 9.16). Could have held poison; but as the piece is rather rotten, the groove may be no more than where the pith has rotted.

(*k*) Stick split lengthways with remains of three holes (fig. 9.14). Perhaps the lower stick of a fire-drill and split during drilling. There may be traces of burning on the split surface.

(*l*) Stick perforated lengthways, perhaps by burning (fig. 9.17).

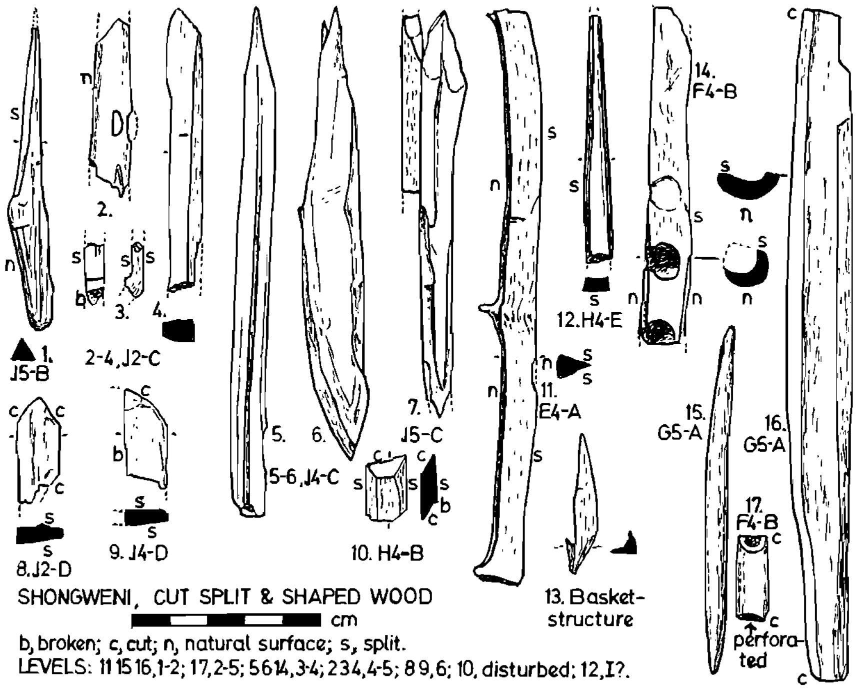
1. J5-B
2.
3.
4.
2-4, J2-C
5.
6.
5-6, J4-C
7.
J5-C
8. J2-D
9. J4-D
10. H4-B
11. E4-A
12. H4-E
13. Basket-structure
14. F4-B
15. G5-A
16. G5-A
17. F4-B
perforated
s
n
c
b
SHONGWENI, CUT SPLIT & SHAPED WOOD
cm
b, broken; c, cut; n, natural surface; s, split.
LEVELS: 11 15 16, 1-2; 17, 2-5; 5 6 14, 3-4; 2 3 4, 4-5; 8 9, 6; 10, disturbed; 12, I?.

Fig. 9

1. Pointed splinter of triangular section
2. Perforated piece.
3. Piece split to a curve.
4. Blunt-pointed split piece.
5. Split and pointed reed.
6. Pointed stick.
7. Stick apparently shaped at end, ? two-pronged.
8. Blunt-pointed cut piece.
9. Piece cut to rounded end.
10. Splinter cut diagonally at each end.
11. Twig split lengthways, ? blade.
12. Broken point ?, split, shaft slightly concave.
13. Barbed point, ? fish-hook.
14. Piece with three holes, ? for fire-making.
15. Link-shaft.
16. Split concave piece of wood.
17. Stick perforated lengthways.

Eighteen large and stout thorns were found, fifteen at all levels in the Upper Occupation, three in Levels I and II of the Lower; these last may be intrusive, but as thorns are fairly resistant, they may have been *in situ*. Dr Gordon-Gray considers that most of them are from *Scolopia* or *Dalbergia*, one looks like *Acacia*. They seem to have been collected for use either as awls or less probably as arrow-points, seeing that some are rather asymmetrical.

Pieces of twine were found in all the levels of the Upper Occupation. They are all two-ply, 1–1½ mm thick. They were made in two ways. In the better pieces each strand is formed of a number of fine fibres, probably vegetable, twisted together; on some of the fibres there is material which Dr Stuckenberg thinks may be resin, so the strands may have been soaked in gum to make them cohere. In all of these pieces the two strands are still tightly twisted together. The longest piece found is 16 cm long, a piece 24 cm long is largely untwisted.

The other sort of twine was made from strips of pliant bark up to 5 mm wide, cut lengthways with the two strands twisted together. We found one incomplete piece; the strip had not been cut right down, but the part which had been cut has two twisted strands. This sort of twine was unsatisfactory, as individual strands have often come untwisted; but it is commoner than the better twine, perhaps because easier to make.

Three pieces of twine were tied to sticks, one of fine twine, one of two narrow bark-strands, and one a single strip of bark. As little survives, one cannot tell how long the twine was. These pieces may have been snares.

Eight pieces are better called rope. Five are two-ply, two are three-ply, and one is nearly untwisted save where knotted. Most of the rope lay incorporated in dung-floors. Two of the two-ply pieces are made of plaited strands formed of grass-stalks little twisted. One rope, a long piece in the dung, is 2 cm across, the other about 8 mm and encrusted with dung. A third piece of two-ply rope is 13 cm long and 5 mm across; each strand is made of fine fibres twisted together. The piece looks very fresh and may be modern, having been carried down a burrow; it was found in J5–A lower between 4 and 10 cm deep. The two pieces of three-ply rope are made of strands twisted from several leaves of grass.

Five bunches of grass were not twisted but were tied with a knot. Some may be rope which has come untwisted. One bunch was tied at the end with another handful of grass.

All the above pieces are fairly short, so it is not possible to indicate their use. Most of them, especially those in the dung-floors, were probably old pieces lying about. There is no evidence for the use of twine or rope to tie sticks or reeds to make mats, baskets or similar objects.

FINDS IN THE LOWER OCCUPATION

Stone artefacts

The stone-industry of the Lower Occupation is even poorer than that of the Upper. What I said above about material applies here too, but I have divided the table into two groups, Levels I–III and Levels IV–VII, because the exposures of the latter were very limited and the amount collected insignificant. Pieces from the pink dust below Level II or III are counted with these levels, as well as those from the dust separating the lower levels.

TABLE 2

	Levels I–III				*Levels IV-VII*			
	QUARTZ	LYDIANITE	QUARTZITE	DOLERITE	QU	LYD	QTE	DOL
Cores	8	8	2	0	1	0	0	1
Flakes	206	214	10	8	30	4	4	3
Unworked chips . .	0	147	1	16	0	4	0	1
Shaped tools	17	4	1	0	5	0	0	0

It will be seen that the great majority of pieces of imported stone are flakes and chips without specialized shape. Only one flake of quartz had signs of wear, but many others could have been used for cutting soft materials, skin, grass or even wood, which operations would cause no wear. The rarity of microcores suggests that stones were often fractured by heating, though four lydianite pieces that I have classed as fabricators were found in Levels II and III.

The commonest tools are microblades, four of quartz and three of lydianite, one from Level IV and the others from Levels I–III (fig. 10.1, 2, 8, 10, 16, 18, 20); the last two are sharp on both edges, the others are blunted on the back either by trimming

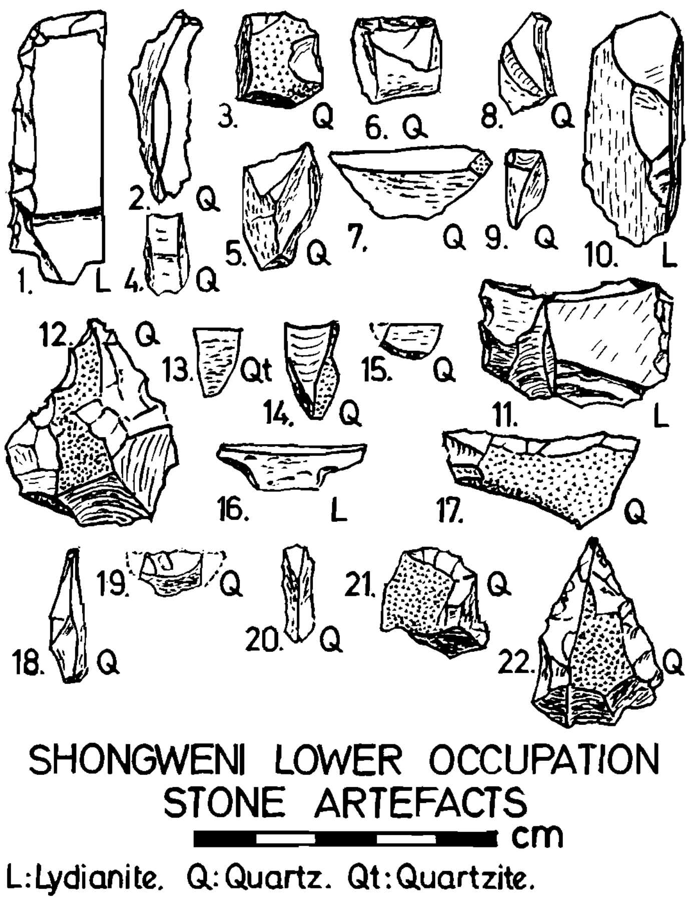
1. L
2. Q
3. Q
4. Q
5. Q
6. Q
7. Q
8. Q
9. Q
10. L
11. L
12. Q
13. Qt
14. Q
15. Q
16. L
17. Q
18. Q
19. Q
20. Q
21. Q
22. Q
SHONGWENI LOWER OCCUPATION
STONE ARTEFACTS
cm
L:Lydianite. Q:Quartz. Qt:Quartzite.

Fig. 10. Stone artefacts from Lower Occupation.

1. Blade, J3–E lower, Level I.
2. Blade, J4–F, Level II.
3. Thumbnail-scraper, J4–F, Level II.
4. Chisel, J4–F, Level II.
5. Chisel, J4–F, Level II.
6. Gouge, J3–F, Level II.
7. Crescent, J4–G upper, Level II.
8. Blade, J4–G upper, Level II.
9. Gouge, J4–G upper, Level II.
10. Blade, J4–G upper, Level II.
11. Notched scraper, J4–G upper, Level II.
12. Notched scraper, J2–G, Level III.
13. Chisel, J2–G, Level III.
14. Gouge, J3–H, Level III.
15. Broken crescent, J3–H, Level III.
16. Blunt-backed blade, J3–H, Level III.
17. Notched scraper, J3–H, Level III.
18. Bladelet, J3–I, Natural dust between Levels II/III and IV.
19. Crescent, E4–E north, end of cave outside occupation.
20. Bladelet, J4–I, Level IV; from a crystal.
21. Rough thumbnail-scraper, J2–K, dust between Levels V and VI.
22. Point, J3–M, pink dust at base of Level VII.

or by transverse flaking. Microblades are rather characteristic of other 'pre-Wilton' industries, earlier than 10000 B.P.; cp. Rose Cottage (O.F.S.) with dates of 29430 ± 520 (Pta-211) and 25640 ± 220 (GrN-5300) (Mason 1969); especially at Sehonghong (Lesotho) in a layer with dates about 20000 B.P. (Carter & Vogel 1974).

There are three chisels (fig. 10.4, 5, 13) and three, perhaps five, pieces with curved, slightly gouge-shaped blades (fig. 10.6, 9, 14). Two and perhaps three pieces are better described as crescents (fig. 10.7, 15, 19). Scrapers of any form are rare: four thumbnails (fig. 10.3, 21), of which two from deep down between Levels V and VI; and three slightly concave scrapers from Levels II and III (fig. 10.11, 12, 17). The only points are one well-made one (fig. 10.22) and perhaps a second from Level VII, and possibly a tanged point from Level II. As it would have been difficult to live without pointed tools and weapons, the people must have used bone (see fig. 7, several probable points) or wood or thorns (mostly disappeared).

Bone and worked bone

The following is a list of the fauna identified by Mr Carter and Dr Klein from the Lower Occupation. The list has been compiled in the same way as that for the Upper Occupation (above p. 643 f). The comments there and the tables in the Appendix apply equally here:

Small antelope: *Cephalophus* sp.; APP A
cf. *Raphicerus campestris*; APP B
Oreotragus oreotragus, identified with certainty by Klein
Medium antelope: *Redunca fulvorufula*, identified with certainty by Klein
cf. *Tragelaphus scriptus*; APP C
Large antelope: ?*Tragelaphus strepsiceros*; APP C
Potamochoerus porcus
Papio ursinus
Hyracoid; APP D
Rodent (unspecified); **Otomys* sp. (vlei-rat)
cf. *Lepus capensis*; APP E
Carnivores; Carter identified one large carnivore from spit E and three small from H and I; Klein gives cf. *Felis* sp. and cf. *Viverridae* sp. (mongoose), both from spit K
Reptiles
Tortoise
Birds
Crab
Fish; see above p. 646.

There are no polished bones from the Lower Occupation, but a number of pieces may well have been used, especially as points (a few of those enumerated are doubtful):

Points with indications of slight trimming by the removal of one or more small flakes: fig. 7.11, 12, 13, 15, 16, 17 ..	34
Points slightly polished: fig. 7.14	3
Points with indication of wear: fig. 7.9, 10	2
Points with apparently trimmed tang: fig. 7.8	2
Probable blades, one with marks of wear	2
Scoop made on the concave face of a splinter of long bone ..	1

The light scratches on fig. 7.8 may be natural. Another piece of long bone, cut at one end and broken at the other, has a lustrous convex face and on the concave face numerous very small parallel scratches, transverse and probably due to polishing.

Other samples collected

Samples of other materials were collected and have been stored in the Natal Museum but not subjected to special analysis, because they do not seem to promise results or owing to lack of skilled specialists. These are listed in the documentation, and include:

(a) A good deal of charcoal. Some samples were selected for radiocarbon-dating, the rest put aside.

(b) Earth and ash samples. These have been graded by sifting. The two smallest grades have been stored. From the larger grades vegetable-fibre, scraps of bone and shell and other material have been retained, and the sand and grit discarded. They yielded very little of interest. Most of the fibre is unrecognizable. There are a few seeds and nut-fragments. Bones were uncommon; one or two small claws and fish-vertebrae were rescued which had escaped notice in the excavation, and there were perhaps one or two microflakes.

(c) Specimens of dung-floors. These contained sticks and sometimes twine, which was extracted. They may well contain pollen. It did not seem worth while pulling them to pieces to find mostly fibre, when they may well one day be of use to some specialist. It has not been possible to identify the dung.

(d) Several moth-pupae were found, some hatched, others bored by a predator. Most of them have not been kept, because Dr Stuckenberg advised that caterpillars may burrow fairly deep, so they may well be recent. One or two below 30 cm are probably contemporary with some part of the site, and have been retained.

(e) In J2–C was a piece of wasp's nest, presumably a species which builds on rock overhangs. This will have been contemporary.

RADIOCARBON-DATES

Dr J. C. Vogel of the National Physical Laboratory of the Council for Scientific and Industrial Research has most kindly dated a number of samples. These have been referred to in the stratigraphic section of the text, and most of them are inserted on fig. 4. They are here set out together. In view of the surprisingly early dates for spits containing cultigens, it was necessary to run a second series of dates. Unfortunately, only one batch of cereal was large enough to do a direct date on it. As the cave-earth was very soft and dusty, it was seldom possible to distinguish disturbance in the Upper Occupation while in the field; the Lower Occupation was more clearly stratified.

Pta–1060 from H4–C, heads of sorghum at about 24 cm. .. .. 730 ± 60

Just above there appeared to be a twig-floor; but the date indicates that the sorghum had been placed in a deep pit dug later than Level 1, the highest occupation-floor just on the modern surface. Heads of sorghum were found in spits A–C and one piece in spit D; in view of the disturbance, even the last may be intrusive. One head from H4–B is unthreshed, and several stalks are broken, probably from threshing. The date indicates that practically all, perhaps all, the sorghum found in the excavations is later than the arrival of Bantu-speakers in Natal.

Pta–1059 from J3–A, specimen of dung-floor from Level 1b .. 1170 ± 50

Above the floor was a very thin occupation, mostly eroded. This date marks the latest preserved occupation of the cave.

Pta–821 from J2–B upper, from a small hearth of Level 3 at about 15 cm, beneath the lower dung-floor of Level 2, charcoal.. 1770 ± 60

In J2–B lower, also Level 3, there was Eleusine and Pennisetum, very probably cultivated and threshed. The date is as old as any Iron Age date from South Africa, and it is not necessary to assume that these plants were grown or collected by Bantu-speakers. They could well indicate proto-cultivation by some unknown people, perhaps Hottentots. There are dates older than this for imported domestic animals at the Cape (Schweitzer & Scott 1973).

Pta–823 from J2–D, from a small hearth at 32–39 cm in Level 6, charcoal .. .. 3870 ± 60

Pta–1061 from J2–D, Level 6, marula pods .. .. 4060 ± 55

There was Eleusine and threshed Pennisetum at this level in this square and in J3–D *Lagenaria siceraria* shaped to a bottle-neck and *Citrullus lanatus*, which may have been introduced. Three floors were traceable above J2–D, so contamination is most unlikely.

Pta–682. Charcoal from the uppermost hearth of the Lower Occupation (Level I), found with bone-chips, a little *Achatina* and a few stone flakes .. .. 11870 ± 130

Pta–822. Charcoal from ash of Level IV beneath a thick stratum of pink, nearly sterile sand .. .. 14760 ± 130

Chips of bone, and one bladelet (fig. 10.20) and six small flakes of stone were found. A soil-sample was sifted, and in addition to scraps of bone and shell there was found one angular and one spherical seed (unidentified).

Pta–966. Charcoal from lowermost hearth (Level VII) on a slab of rock, dipping from 115 to 122 cm, in J3–L.. .. .. 22990 ± 310

There were found some cut chips of bone from fair-sized animals and a few small stone flakes.

CONCLUSIONS

The surprising results and chronology of the Shongweni excavation permit conclusions which at present, owing to lack of evidence, are of the most conjectural nature. In the Upper Occupation we have traces in the late third millennium B.C. (allowing for radiocarbon-calibration) of a people who had pottery and some form of agriculture or proto-agriculture, with cultivation of cereals and cucurbits; there is no evidence for tubers, and such evidence would be very difficult to come by. They had no domestic animals (I would discount possible bones of sheep), and they lived in a cave and not on an open site.

These people are most unlikely to have been Bantu-speakers. Accumulating evidence suggests that the Bantu-speaking groups were developing in the region of the Great Lakes not much before the Christian era, and were pressing southward in the earliest centuries A.D. They had domestic cattle and iron, they cultivated cereals, especially sorghum, and certain field-legumes, and they usually lived in clustered villages, though they might take refuge in caves.

Traditionally separate from the Bantu-speakers were people vaguely described as Hottentots. In the historical period they had pottery and domestic animals, especially cattle, but apparently little or no agriculture or iron. There is reason for thinking that they may originally have had not cattle but sheep, and that they had obtained cattle from the Bantu. It also seems likely that the sheep-owners had crossed from the eastern side of Africa, though the Hottentots, as known historically, were on the west and south-west. They had probably obtained their sheep from Asia, by sea or through north-east Africa, as this animal is not indigenous to this continent.

The traditional Hottentots do not fit the Shongweni people, whose cultural assemblage points to certain cultures north of the equator, impoverished owing to the difficulty of keeping either sheep or cattle in the East African coastlands. If at some time Hottentots migrated south, perhaps in small numbers but with defined cultural goods, it is not impossible that other groups came too. I envisage not mere culture-contact but a limited movement of people who would introduce cultural devices to scattered hunter–gatherers with whom they coalesced. So little is known of prehistoric cultures that it would be difficult to define other items which they may have brought; one may ask whether the barbed-and-tanged arrowhead and the fish-hook may not have been introduced from the southern fringe of the Sahara, where they were used at an early date. Pottery has been found in north Kenya earlier than that at Shongweni; and the Ethiopian Region has for long been suspected, without positive evidence, of being one of the principal centres of domestication of summer-rain cereals.

While chronologically a derivation of some cultural items at Shongweni from north of the equator is not ruled out, the main difficulty is the gap of more than 30° of latitude. It must however be remembered that exploration in the coastlands of eastern Africa has sadly lagged. The great stretch of Mozambique is a blank, Zululand is nearly as bad. There has been some exploration in Tanzania, but traces of these early agriculturalists may well not have been picked up.

With regard to the Lower Occupation, in the range of 10000–25000 B.P. we are in Natal just in the stage of beginning to amass evidence, and no conclusions can be drawn. We seem to have at Shongweni a hunter–gatherer culture with a very poor tool-kit of stone and probably bone; no wood survives. It is possible that the Shongweni people should be equated with one or more of the groups identified by Schoute-Vanneck & Walsh on the cordon of coastal dunes in Natal; but most of their results are unpublished, and their method of collection on open eroded sites would make comparison difficult. On these dunes bone of the required range of date would not survive well, and datable organic material was not found. Both in coastal and in inland Natal we know a good many sites labelled 'Late Stone Age' or 'Wilton', but without stratification we cannot date them. Cave-sites near the coast are rare, and much of the immediate hinterland, where they might occur, is very inaccessible and its exploration is particularly difficult because it is largely Bantu Reserves. There are extensive stratified land-surfaces especially in north Natal; but apparently their stratification extends from the Late Acheulian to the Middle Stone Age; the Late Stone Age horizon is shallow, usually less than one metre, and often eroded. Presumably the difference in sedimentation of the two periods, which were not greatly unequal in length, was due to different climatic regimes. Cold and comparative aridity, contemporary with the last part of the last northern glaciation, inhibited from about 30000 B.P. the accumulation of sediments sealed by stone-lines and ferricrete-crusts. So it is difficult at present even to envisage a programme of investigation of the Natal Late Stone Age, because we know no promising sites.

APPENDIX ON FAUNA

Dr Klein's comments on some of the identifications of bones set out above on pp. 644–5, 656:

A. *Cephalophus*. The duiker material is incredibly small. I think we must be dealing with the blue duiker (*C. monticola*), except perhaps for a tooth in E4–B, which could belong to the red duiker (*C. natalensis*).

B. *Raphicerus campestris*. I am unable to distinguish between steenbok (*R. campestris*) and grysbok (*R. melanotis*) on the basis of body-parts in the sample; but on geographic grounds I have tentatively assigned these pieces to steenbok.

C. *Tragelaphus*. I am particularly uncertain of the presence of the three species of this genus. My identifications had best be read as indicating bovids of the respective sizes of the three species. It is possible that the *T. scriptus* material from J5–C and E4–D might belong to sheep (*Ovis aries*).

[Note by Carter: 'None of the bones examined can be attributed to domestic animals, with the possible exception of a cattle-sized second phalange fragment in spit E, and first and third phalange fragments of caprovine size in spits C and D. Should subsequent analysis show that domestic animals are present, it is unlikely that they would have been of economic importance in view of the high proportion of antelope (Upper Occupation 72%, Lower 70%).']

[Note by author: 'In view of these uncertainties, I am assuming that no domestic animals were found. I would be even more hesitant to accept sheep than cattle, because they would be exposed to deterioration and disease in the Natal lowveld.']

D. Hyracoid. On the basis of body-parts sent, I am uncertain which dassie is present, perhaps both (*Dendrohyrax arboreus* and *Procavia capensis*). With klipspringer and mountain-reedbok, I would expect at least the latter. [It is extremely abundant around this cave today. O.D.]

E. *Lepus*. On the basis of available body-parts, I was unable to make specific identification.

F. Reptiles. Identified vertebra of large snake, and lizard.

TABLES 1 and 2

NOTE. It appears that Mr Carter did not include in his tables the pieces identified by Dr Klein. I have therefore added in brackets to Table 1 the total identified by both scholars, and have kept the section Birds as Dr Klein identified, without subdividing according to Mr Avery's identifications. I have added sections for those animals which only Dr Klein identified.

I have omitted the section Fish, because I identified many more bones than Mr Carter found, and have discussed them above (p. 646). Apparently many vertebrae which I identified were not sent to Mr Carter.

I have not added to the percentages in Table 2 the identifications by Dr Klein; the figures represent only Mr Carter's identifications. So few bones were sent to Dr Klein that the addition of his figures would make a difference of only a few per cent. I have however added those animals which only Dr Klein identified.

TABLE 1

Numbers of identifiable fragments

SPIT	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*
Small antelope . .	1(4)	4(8)	10(13)	18(20)	16(18)	18	12(14)	13	2	0	1
Medium antelope .	4(5)	1	4(5)	3(5)	3(4)	1	9(12)	7	3	0	2
Large antelope . .	1(2)	1(2)	2	1	0	8(9)	1	0	3	0	0
Bush-pig . . .	0	0	0	1(2)	0	1	3(4)	1	0	0	0
Baboon	2	0	0	1(2)	0(1)	0	0	0	0	0	0(1)
Vervet	1	0	0	0	0	0	0	0	0	0	0
Insectivore . . .	1	0	0	0	0	0	0	0	0	0	0
Hyracoid . . .	0(1)	1(2)	2	4(5)	3	3	4	3	0	0	1
Rodents. . . .	2	0	0	0	2	2(3)	0	0	0	0	1
Hare	0	0(1)	0	0	0	0	0(1)	1	2	0	0
Large carnivore .	0	0	0	0	1	0	0	0	0	0	0
Small carnivore .	0	0	0	0	0	0	0	1	2	0	0(2)
Reptiles. . . .	0	1(2)	0	1(2)	0(1)	2	0	0	0	0	0
Tortoise. . . .	0	0	0	0	0	0	0	2	1	0	0
Birds	2(4)	4(10)	2(3)	0(1)	2(3)	2	0	3	0	0	0
Crab	0	0	0	0	0	0	1	0	0	0	0

TABLE 2

Relative proportions of different animals in the upper and lower levels. The figures given are percentages.

	Upper Occupation A to D	*Lower Occupation E to K*
Small antelope . . .	48	43
Medium antelope . .	17	17
Large antelope . . .	7	10
Hyracoid	10	10
Birds	12	5
Insectivores	1	0
Monkeys.	1	0
Rodents	3	3
Reptiles	1	1
Baboons	1	0
Bush-pig	1	3
Hare	0	2
Tortoise	0	2
Large carnivore. . .	0	1
Small carnivore . . .	0	2
Crab	0	1
	102	100

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